

## Curriculum Vitae

### Personal Data

Name: Jorge Raul Tredicce  
 Born: January 11<sup>th</sup>. 1953 in Buenos Aires, Argentina  
 Nationality: Italian  
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### Languages

Spanish, Italian, English, French and Portuguese.

### Education

1970 B.S. General studies: Colegio Nacional de Buenos Aires  
 1976 Licenciatura en Fisica: University of Buenos Aires  
 1978 Laurea in Fisica: University of Florence

### Postdoctoral Training

July 1980 Europhysics School of Quantum Electronics “Physical Processes in Laser-Materials Interactions”, Camaiore, Lucca, Italy  
 June-July 1981 NATO-ASI School on “Electrical Breakdown and Discharges in Gases”, Les Arcs, France  
 Aug. 1982 23rd Scottish Universities Summer School in Physics on “Laser Physics, Systems and Techniques”, Edinburgh, United Kingdom

### Academic Appointments

1985 Visiting Professor, Drexel University  
 1985-1987 Assistant Professor, Drexel University,  
 1987-1990 Associate Professor, Drexel University  
 1990-1991 Professor of Physics, Drexel University  
 1991-present Professor of Physics, Universite de Nice  
 2001 Adjoint Director, Institut Non Lineaire de Nice  
 2002-present Director, Institut Non Lineaire de Nice (INLN) UMR 6618 CNRS-Universite de Nice-Sophia Antipolis

### Other Work Experience

1973-1976 Science Teacher, Colegio Tarbut, Buenos Aires, Argentina  
 1977 Assistant Research Associate, CEILAP C.I.T.E.F.A., Buenos Aires, Argentina  
 1977-1984 Researcher, Istituto Nazionale di Ottica, Florence, Italy

### Scientific Activities

#### Editorial Boards

1998 Editor of the Special Issue on Nonlinear Dynamics of Lasers of the Journal of the Optical Society of America  
 1999-present Member of the Editorial Board of Optics Communications  
 2008-present Editor European Physical Journal D (EPJD)

### Scientific Advisory Committee

1991	Chairman, Search Committee Drexel University
1992-2008	Commission de Specialistes 30 section Universite de Nice
1996	Member, Evaluation Committee of the Laboratoire de Spectroscopie Hertzienne de l'Universite de Lille (France)
1998	Member, Scientific Committee "Physics of Coherent Light Sources" CLEO-EQEC 98 Glasgow, Scotland, UK
1999	Member, Scientific Committee "Nonlinear Periodic Structures and Cavities Nonlinear Guided Waves and their Applications, Dijon, France
2000	Member, Scientific Committee CLEO-IQEC 2000, Nice France
2002	Member, Scientific Committee CLEO-EQEC 2003, Munich, Germany
2004	Member, Scientific Committee CLEO-EQEC 2005, Munich, Germany
2007	Member, Scientific Committee CLEO-IQEC 2007, Munich, Germany
2008-present	Member of the "Comitee National du CNRS – Section 04"

### Journal Reviews

Reviewer for: *Journal of the Optical Society of America, Optics Communications, Physical Review A, Physical Review E, Physical Review Letters, Physica D, Optics Letters, etc.*

Reviewer of Scientific projects for *National Science Foundation (USA), CONYCET (Chile), Comision de Proyectos de Ciencia y Tecnologia (Spain), National Com. of Science (Canada), FONCYT (Argentina) and CINECA (Italy), ANR (France), CIFRE (France).*

### Teaching Activities

1980

Courses on Laser Physics for the Project on High Power Laser Sources sponsored by the Consiglio Nazionale delle Ricerche (National Council of Research) , Florence, Italy

1981-1983

Courses in Optics for the Specialized School of the University of Florence, Florence , Italy

1985-1994

Undergraduate Courses at Drexel University

Graduate Courses at Drexel University

1989-1991

Senior Projects: John Iannuzzi (1989-90); Peter La Salle (1989-90); Carlos Picchardo (1990-91)

1992-2004

DEUG courses at the University of Nice

TD Optics and Electromagnetism at the University of Nice

Maitrise courses at the University of Nice

1994-present

Interaction of radiation and matter, Laser Physics, Quantum Optics, and Nonlinear Dynamics in Optics at Master level

1999 - 2004

Electromagnetic Radiation, License de Physique-Chimie, Universite de Nice

2005-2008

TD Mecanique Quantique, License, Universite de Nice

2010

Optical Information Processing, Doctoral course at Universidad Tecnologica de Buenos Aires

### **Ph.D Thesis supervised**

- 1988 W. Scharpf "Delayed Bifurcations at the first Threshold of Lasers", Drexel Univ. (USA)  
1991 C. Green "Spatio-temporal structures in Laser systems", Drexel Univ. (USA)  
D. Bromley "Anticipation versus delay at the laser threshold", Drexel Univ. (USA)  
1995 G. Huyet "Dynamique Spatio-Temporelle des lasers", Univ. de Nice-Sophia Antipolis  
1996 R. Alvarez "Bifurcations with symmetry in Lasers and Hydrodynamical systems" Drexel Univ. (USA)  
1997 S. Barbay "Collective Atomic Recoil Laser", Universite de Nice  
1999 M. Giudici "Dynamique Non Lineaire d'un laser a semiconducteurs", Universite de Nice  
2001 S. Barland "Structures Localisees dans les amplificateurs de lumiere a semiconducteurs", Universite de Nice,  
2002 E. Tolkacheva "Propagation de la lumiere dans les milieux non lineaires avec modulation de l'indice de refraction", Universite de Nice  
2003 X. Hachair "Dynamique Spatio-Temporelle dans les VCSEL", Universite de Nice  
M. Tormen "Nonlinear Optics in Random Media" Universite de Nice  
2005 F. Pedacci "Turbulence in Lasers" Universite de Nice  
2006 D. Faccio "Nonlinear Conical Waves in ultrashort pulse filamentation and applications." Universite de Nice  
2008 E. Caboche "Control of motion of solitons" Universite de Nice-Sophia Antipolis  
2009 P. Genevet "Cavity Soliton Lasers" Universite de Nice Sophia Antipolis

#### Italian "Laurea" Thesis supervised

- 1983 R. Meucci "Chaos in Laser with Modulated Losses", Univ. de Firenze (Italy)  
G. P. Puccioni "Transition to Chaos, Generalized Multistability and 1/f Noise in a Q-switched CO<sub>2</sub> Laser", Univ. de Firenze,  
1984 G. L. Lippi "Deterministic Mode Alternation and Chaos in a CO<sub>2</sub> Ring Laser", Univ. de Firenze (Italy)  
1985 A. Poggi "Dimensionality Test on CO<sub>2</sub> Lasers with modulated parameters", Univ. de Firenze (Italy) 1985.  
1995 C. Martinoni "Turbolenza nei lasers", Univ. de Milan  
L. Bertarelli "Dinamica Spazio-Temporale de en laser ad anello". Univ. de Milan  
M. Giudici "Dinamica de un laser a semiconduttori con retroazione ottica" Univ. de Milan  
G.P Barozzi "Laser a rinculo atomico collettivo" Univ. de Milan  
1996 U. Nespolo "Excitabilita nei laser a semiconduttori" Univ. de Milan  
2001 F. Pedacci "Dinamica di laser accoppiati" Univ. De Milan

#### Extramural Invited Presentations

1984

"Chaos in Laser Systems", NATO-ASI School on "Quantum Optics", Santa Fe, New Mexico, U.S.A. May 1984. Lectures.

1986

"Chaos in Laser Systems", Brown University, Providence, Rhode Island, U. S. A., June 1986.

"Transverse Effects in Lasers", Istituto Nazionale di Ottica, Florence, Italy, September 1986.

"Coexisting Attractors in Laser with Modulated Losses", Istituto Nazionale di Ottica, Florence, Italy, September 1986.

"Coexisting Attractors in Laser with Modulated Losses", Institut fur Theoretische Physik of the University of Zurich, Zurich, Switzerland, September 1986.

1987

"Chaos in Lasers", Steven's Institute of Technology, New York, February 1987.

- “Nonlinear Dynamics of Lasers”, Istituto di Cibernetica del CNR, Naples, Italy, July 1987.
- “Single Mode, and Multimode Instabilities in Lasers”, CEILAP (CITEFA-CONICET), Buenos Aires, Argentina, October 1987.
- “Role of Transverse Effects in Laser Instabilities”, CEILAP (CITEFA-CONICET), Buenos Aires, Argentina, October 1987.
- “Subharmonic Bifurcations, Generalized Multistability, and Chaos in a Laser with Modulated Parameters”, CEILAP (CITEFA-CONICET), Buenos Aires, Argentina, October 1987.
- “Dissipativity of an Optical System Characterized via Generalized Multistability”, CEILAP (CITEFA-CONICET), Buenos Aires, Argentina, October 1987.
- “Relative Rotation Rates and their Relevance on Driven Nonlinear Systems”, Department of Physics, College of Science, University of La Plata, La Plata, Argentina, October 1987.
- “Chaos in Lasers”, Centro de Investigaciones Opticas, CIOP, La Plata, Argentina, October 1987.
- “Measurement of Correlation Dimension and Entropy”, Comision Nacional de Energia Atomica (CNEA), Buenos Aires, Argentina, October 1987.

### 1988

- “Measuring Chaos in Laser Systems”, Lectures at a Summer School on Lasers and Quantum Optics, Mar del Plata, Argentina, August 1988.
- “Optical Turbulence”, Department of Physics, College of Science, Universidad de Tandil, Tandil, Argentina, December 1988.
- “Chaos and Spatial Complexity”, CAERCEM, Buenos Aires, Argentina, December 1988.
- “Lasers as a Test Bench for Nonlinear Dynamic Theory”, Dept. of Physics, College of Science, University of Buenos Aires, Buenos Aires, Argentina, December 1988.
- “Measuring Chaos”, a Series of Lectures at the College of Science, University of Bogota, Bogota, Colombia, November 1988.
- “From Chaos to Turbulence in Optical Systems”, College of Science, University of Medellin, Medellin, Colombia, November 1988.

### 1989

- “Crises in Laser with Modulated Losses”, Department of Physics, College of Science, Oklahoma State University, Stillwater, OK, U. S. A., February 1989.

### 1990

- “Optical Turbulence?”, Colloquium at the Department of Physics, Drexel University, Philadelphia, Pa., April 1990.
- “Spatio-Temporal Complexity in Lasers”, Colloquium of the SPS of Drexel University, Philadelphia, Pa., November 1990.
- “Chaos in Lasers”, Invited Talk at a workshop on “Experimentation”, Nice, France, May 1990.
- “Spatio-temporal Complexity in Lasers”, Invited Talk at a workshop on “Experimentation”, Nice, France, May 1990.
- “Spontaneous Symmetry Breaking in Lasers” Invited Talk at L'Ecole d' Ete de Physique Theorique de Les Houches, Les Houches, France, July 1990.
- “Temporal Instabilities in lasers”, Department of Physics, University of Navarra, Pamplona, Spain, July 1990.
- “Optical Turbulence”, Department of Physics, University of Navarra, Pamplona, Spain, July 1990.

### 1991

- “Defect Mediated Turbulence in Optical Systems”, Universita di Milano, Milan, Italy, May 1991.
- “Temporal and spatial dynamics of laser systems”, Dept. of Mathematics, University of Arizona, Tucson, Arizona, November 1991.
- “Role played by imperfections of the O(2) symmetry in Lasers” Invited Talk at the IV Intn'tl Workshop on “Nonequilibrium structures” Valparaiso, Chile, December 1991.
- “Formation of spatial structures in Lasers”, Invited Talk at the I Conference of the European Network on Nonlinear Optical Systems, Montecatini, Italy, February, 1991.

“Bifurcations with symmetry in Lasers”, Institut Nonlineaire de Nice, Univ. de Nice, France, May, 1991.  
“Temporal and spatial dynamics of laser systems”, Universidad de s Isles Balears, Palma de Mallorca, Spain,  
April 1991.  
“Bifurcations with symmetry in Lasers”, UNED, Madrid, Spain, April 1991.  
“Nonlinear Dynamics in Optical Systems”, Universidad de Catalunya, Barcelona, Spain, 1991.

1992

“Role played by imperfections of the O(2) symmetry in Lasers” , Istituto Nazionale di Ottica, Florence, Italy,  
February 1992

1993

“Nonlinear Dynamics in Optics”. Course at the Normal University of Beijing, China. May 1993.  
idem as 38, at Jilin University, Chang-Chun, China, May 1993  
Invited talk on “Transverse Dynamics of lasers” at the International Conference on Lasers and Electro-Optics  
(LEOS), San Francisco, November 1993

1994

Invited talk on “Instabilities in Lasers” at the International Conference on Nonlinear Dynmics (MEDYFINOL),  
Montevideo, Uruguay, October 1994

1995

Seminars on: a) Experimental test on symmetry breaking in lasers\_b) Collective Atomic Recoil Laser\_University  
of Jilin, Chang-Chun, China, September 1995  
Seminar at the Varenna School, Varenna, Italy, July 1995

1996

Invited Talk on Longitudinal Spatial Instabilities at the Intn'l Conference on Lasers and Electro-optical Systems  
(LEOS), Boston, November 1996  
Lectures at the School on Nonlinear Dynamics at the University of Buenos Aires, Argentina, December 1996.  
Seminar on “How a laser becomes a cardiac tissu”, Palma de Mallorca, Spain, March 1996.  
Lectures at the School on “NonLinear Dynamics in Optical Systems”, Les Houches, June 1996.  
Lectures at the School on Nonlinear Dynamics at the University of Buenos Aires, Argentina, December 1996.  
Seminar on Non Linear Dynamics of Semiconductor Lasers, University of Munster, Munster Germany,  
September 1996.  
Lecture on “Laser Physics for pedestrians”, Universidad des Iles Balears, Palma de Mallorca, Spain, October  
1996.

1997

No-Linear 97 Avila, Spain, April 97 Mesa Redonda “Perspectivas en Ciencia no-lineal ”

1998

Lectures at the School on Nonlinear Dynamics of Optical Systems. Universidad de Buenos Aires, Argentina.  
October 1998.

1999

Seminar on Excitability in Optics, Vrije University, Amsterdam, Holland, november 1999.  
Seminar on Localized Structures in VECSELS, Universite Libre de Bruxelles, Belgium, December 1999.  
Seminar on “Excitable Waves in Optics”, University of Munster, Germany, September 1999.

2000

Excitability in Optics at the Summer School on “Fundamentals Issues of Nonlinear Laser Dynamics”, Texel,  
Holland, April 2000.  
Seminar on Pattern Formation in VECSELS, IMEDEA, Mallorca, Spain, May 2000.

Seminar on Cavity Solitons in Semiconductor Amplifiers, INOA, Florence, Italy, November 2000.

2001

Seminar on Cavity Solitons in VCSELs, Duke University, North Carolina, USA, October 2001.

Course for Ph.D. students on “Experimental Non Linear Dynamics”, University of Pisa, Pisa, Italy. May 2001

2002

Cavity Solitons in VCSELs, School on “New Laser Sources and Applications”, Capri, Italy, September 2002.

2003

Experiments of Non Linear Dynamics in Optics, International Meeting in Honor of Prof. Paul Mandel, Brussels, 2003.

2005

Observation and Characterization of Cavity Solitons, Departamento de Fisica, Facultad de Ciencias Exactas, Univ. de Buenos Aires, Argentina, September

Cavity Solitons in VCSELs, Department of Physics, Cork University, Cork, Ireland

2006

Methods of Data Analysis using Nonlinear Dynamcs, Cancer Research Center, University of Michigan, Ann Arbor, Michigan, USA, May

Physics and Applications of Cavity Solitons, Instituto Tecnologico de Buenos Aires (ITBA), Buenos Aires Argentina, August.

Localized Structures in Semiconductor Devices, CEILAP, Buenos Aires, Argentina, August

2007

Cavity Solitons in Semiconductor Devices, Univ. dell’Insubria, Como, Italy, February

About Cavity Solitons in Semiconductor Devices, St. Petersburg, Russia, March

Physics and Applications of Cavity Solitons, Vrijde University, Brussels, Belgium, June

Nonlinear Dynamics of Lasers, Department of Physics, Univ. Federal de Pernambuco, Recife, Brasil, November

Escuela Sudamericana de Fisica (ESLAF), Recife, Brasil, October

Force Microscope using Cavity Solitons, Department of Physics, Univ. Federal de Pernambuco, Recife, Brasil, August

2008

Nonlinear Dynamics in Optics, Colloquium in Optics, Univ. Fed. de Pernambuco, Recife Brazil June 2008

2009

Localized Structures in Optics, Bhabha Centenary Seminars and Meetings  
Mumbai, India October 2009

Nonlinear Dynamics in Optics, Bhabha Centenary Seminars and Meetings  
Mumbai, India October 2009

Committees and Administrative Services

- 1988 Co-Organizer of the Summer School on Lasers and Quantum Optics, Mar del Plata, Argentina  
Named External Member of the CONICET (Argentinian National Council for Scientific and Technological Research)
- 1991 Chairman of Search Committee Drexel University

- 1992 Co-Organizer of the NATO workshop on "Nonvariational Aspects of Nonlinear systems", Estella, Spain  
Co-Organizer of the II Meeting of the European Network on Nonlinear Optics, Nice, France
- 1992-present Commission de Specialistes 30 section Universite de Nice
- 1995 Co-organizer of the conference "Measures of Spatio-temporal Dynamics", Bryn Mawr, USA
- 1996 Appointed to the Scientific Committee of the Laboratoire de Spectroscopie Hertzienne de l'Universite de Lille (France)
- 1998 Member of the Scientific Committee "Physics of Coherent Light Sources" CLEO-EQEC 98. Glasgow, Scotland, UK
- 1999 Member of the Scientific Committee "Nonlinear Periodic Structures and Cavities Nonlinear Guided Waves and their Applications". Dijon, France
- 2001 Directeur Adjoint de l'Institut Non Lineaire de Nice, CNRS-Universite de Nice
- 2002-present. Directeur de l'Institut Non Lineaire de Nice, CNRS-Universite de Nice
- 2003 Member of the Scientific Committee of the EQEC 2002, Munich, Germany

## Bibliography

Web of Science data (October 2010): 113 publications; 3,360 citations; h-index: 32; Avg.cit/year: 112;

### Peer-Reviewed Publications

1. C. Castellini and J. R. Tredicce , "Propagazione di un modo TEM<sub>01+10</sub> e sua Distribuzione di Intensita", Quaderni della Ricerca Scient. 83 (1983).
2. F. T. Arecchi, C. Castellini, H. Mancini, and J. R. Tredicce, "Optimum Energy and Duration in Pulses Laser Heating of Organic Materials" Opt. Commun. 41, 277 (1982)
3. F. T. Arecchi, R. Meucci, G. P. Puccioni, and J. R. Tredicce "Experimental Evidence of Sub-harmonics bifurcations, Multistability and Turbulence in a Q-Switched Gas Laser" , Phys. Rev. Lett. 49, 1217 (1982)
4. N. B. Abraham, F. T. Arecchi, G. L. Lippi, and J. R. Tredicce "Stable Oscillations in a Bistable, Bidirectional CO<sub>2</sub> Ring Laser", Phil. Trans. R. Soc. London A313, 441 (1984).
5. F. T. Arecchi, G. L. Lippi, G. P. Puccioni, and J. R. Tredicce. "Deterministic Chaos in a Laser with an Injected Signal", Opt. Commun. 51, 308 (1984).
6. G. P. Puccioni, A. Poggi, W. Gadoski, J. R. Tredicce and F. T. Arecchi, " Measurement of the formation and evolution of a Strange Attractor in a Laser", Phys. Rev. Lett. 55, 339 (1985).
7. J. R. Tredicce, N. B. Abraham, G. P. Puccioni and F. T. Arecchi, " On Chaos in Lasers with Modulated Parameters : A Comparative Analysis", Opt. Commun. 55, 131 (1985).
8. L. M. Narducci, J. R. Tredicce, L. A. Lugiato, N. B. Abraham and D. K. Bandy, "Multimode laser with an Injected Signal : Steady-state and Linear Stability Analysis", Phys. Rev. A 32, 1588 (1985)
9. J. R. Tredicce, F. T. Arecchi, G. L. Lippi, and G. P. Puccioni "Instabilities in Lasers with Injected Signal", J. Opt. Soc. Am. B2, 173, (1985)
10. G. L. Lippi, N. B. Abraham, F. T. Arecchi, and J. R. Tredicce "Deterministic Mode Alternation, Giant pulses and Chaos in a Bidirectional CO<sub>2</sub> Laser", Opt. Commun. 53, 129 (1985)

11. F. T. Arecchi, G. Lippi, G. P. Puccioni, and J. R. Tredicce "Stable Self-Pulsation and Chaos in Laser with Injected Signal", *Acta Physica Austriaca* 57, 119 (1985)
12. J. R. Tredicce, L. M. Narducci, N. B. Abraham, D. K. Bandy, and L. A. Lugiato, "Experimental Evidence of Mode-mode Competition leading to Optical Bistability in Homogeneously Broadened Lasers", *Opt. Commun.* 56, 435 (1986)
13. N. B. Abraham, A. M. Albano, B. Das, G. de Guzman, S. Yong, R. S. Gioggia, G. P. Puccioni, and J. R. Tredicce, "Calculating the Dimension of Attractors from Small Data Sets", *Phys. Lett.* 114A, 217 (1986)
14. L. M. Narducci, J. R. Tredicce, L. A. Lugiato, N. B. Abraham, and D. K. Bandy, "Mode-Mode Competition and Unstable Behavior in a Homogeneously Broadened Ring Laser", *Phys. Rev.* A33, 1842 (1986)
15. L. A. Lugiato, L. M. Narducci, D. K. Bandy, and J. R. Tredicce, "Single Mode Approximation in Laser Physics: A Critique and a Proposed Improvement", *Phys. Rev.* A33, 1109 (1986)
16. J. R. Tredicce, F. T. Arecchi, G. P. Puccioni, A. Poggi, and W. Gadomsky, "Dynamic Behavior and Onset of Low Dimensional Chaos in a Modulated Homogeneously Broadened Single Mode Laser: Experiments and Theory", *Phys. Rev. A* 34, September 1986
17. G. L. Lippi, N. B. Abraham, G. P. Puccioni, F. T. Arecchi, and J. R. Tredicce, "Evidence that Transverse Effects Cause an Instability in a Single Mode CO<sub>2</sub> Laser", *Phys. Rev. A* 35, 3978 (1987).
18. H. G. Solari, E. Eschenazi, R. Gilmore, and J. R. Tredicce, "Influence of Coexisting Attractors on the Dynamics of a Laser System", *Opt. Commun.* 64, 49 (1987).
19. W. Scharpf, M. Squicciarini, D. Bromley, C. Green, J. R. Tredicce, and L. M. Narducci, "Experimental Observation of a Delay Bifurcation at the Threshold of an Argon Laser", *Opt. Commun.* 63, 344 (1987).
20. L. A. Lugiato, F. Prati, D. K. Bandy, L. M. Narducci, P. Ru, and J. R. Tredicce, "Low Threshold Instabilities in Unidirectional Ring Lasers", *Opt. Commun.* 64, 167 (1987).
21. P. Ru, L. M. Narducci, J. R. Tredicce, D. K. Bandy, and L. A. Lugiato, "The Gauss Laguerre Modes of a Ring Resonator", *Opt. Commun.* 63, 310 (1987).
22. R. Meucci, A. Poggi, F. T. Arecchi, and J. R. Tredicce, "Dissipativity of an Optical Chaotic System Characterized via Generalized Multistability", *Opt. Commun.* 65, 151 (1988).
23. L. A. Lugiato, G. L. Oppo, M. A. Pernigo, J. R. Tredicce, L. M. Narducci, and D. K. Bandy, "Spontaneous Spatial Pattern Formation in Lasers and Cooperative Frequency Locking", *Opt. Commun.* 68, 63 (1988).
24. L. A. Lugiato, F. Prati, L. M. Narducci, P. Ru, J. R. Tredicce, and D. K. Bandy, "Role of transverse Effects in Laser Instabilities", *Phys. Rev. A* 37, 3847 (1988).
25. Abraham NB, L. M Hoffer, Lippi GL, and Tredicce JR, "Spontaneous Switching Between Steady-States in a Bidirectional CO<sub>2</sub> Ring Laser", *Chinese Journal of Infrared Physics* (1988).
26. G. L. Oppo, Tredicce JR, and Narducci LM, "Dynamics of Vibro-rotational CO<sub>2</sub> Laser Transitions in a Two Dimensional Phase Space", *Opt. Commun.* 69, 393 (1989).
27. Tredicce JR, E. J. Quel, A. Ghazzawi, C. Green, M. A. Pernigo, Narducci LM, and Lugiato LA, "Spatial and temporal Instabilities in a CO<sub>2</sub> Laser", *Phys. Rev. Lett.* 62, 1274 (1989).

28. F. Narducci, D. Bromley, G. L. Oppo, and Tredicce JR, “Instabilities in a Hybrid Bistable System without Delayed Feedback”, *Opt. Commun.* 75, 184 (1990).
29. Lugiato LA, G. L. Oppo, Narducci LM, and Tredicce JR, “Instabilities and Spatial Complexity in a Laser” , *Journal of the Optical Society of America JOSA B* 7, 1019 (1990).
30. R. Alvarez, E. J. Quel, D. W. Bromley, Tredicce JR, and Narducci LM, “A theoretical Investigation of a CO<sub>2</sub> Hybrid Laser”, *Optics Commun.* 80, 60 (1990)
31. H. Y. Ling, J. M. Yuan, Narducci LM, Tredicce JR, and W. J. Scharpf, “Theoretical Analysis of the Steady state behavior of a Raman Anti-Stokes ring laser”, *Opt. Commun.* 78, 393 (1990).
32. Narducci LM, M. O. Scully, G. L. Oppo, P. Ru, and Tredicce JR, “The spontaneous emission and absorption properties of a driven three level system”, *Phys. Rev. A* 42, 1630 (1990).
33. C. Green, G. Mindlin, E. J. D'Angelo, H. Solari, and Tredicce JR, “Spontaneous symmetry breaking in a laser: the experimental side”, *Phys. Rev. Lett.* 65, 3124 (1990).
34. E. D'Angelo, C. Green, Tredicce JR, Abraham NB, S. Balle, Z. Chen and G.L Oppo “Symmetry Breaking, Dynamical Pulsations, and Turbulence in the Transverse Intensity Patterns of a laser : the role played by defects” *Physica D* 61, 6 (1992).
35. E. D'Angelo, E. Izaguirre, G.B Mindlin, G. Huyet, L. Gil and Tredicce JR, “Spatiotemporal Dynamics of Lasers in Presence of an Imperfect O(2) Symmetry”, *Phys. Rev. Lett.* 68, 3702 (1992)
36. D. Bromley, E. D'Angelo, S. Balle, and Tredicce JR, “Anticipation of the switch-off and delay of the switch-on of a laser with a swept parameter”, *Optics Commun.* 99, 65 (1993)
37. G. B. Mindlin, R. Lopez-Ruiz, C. Perez Garcia, and Tredicce JR, “A mode-mode interaction for a CO<sub>2</sub> Laser with an Imperfect O(2) symmetry”. *Phys. Rev A* 47, 500 (1993)
38. R. Lopez-Ruiz, G.B Mendlin, C. Perez-Garcia and J.R. Tredicce, “Nonlinear Interaction of transverse Modes in a CO<sub>2</sub> Laser”, *Phys. Rev A* 49, 4916 (1994)
39. S. Balle, M. San Miguel, N.B Abraham, J.R. Tredicce, R. Alvarez, E.J. D'Angelo, K. Scott-Thornburg, and R. Roy, “Transients in Multivariable Dynamical Systems Depend on wich parameter in Switched as illustrated in lasers”, *Phys. Rev Lett.* 72, 3510 (1994)
40. H. Grassi, C. Green, L.M Hoffer, G.L Lippi, and J.R. Tredicce, “Experimental Study of the turn-on statistics of class-B lasers under the influence of additive noise”, *Phys. Rev A* 50, 805 (1994)
41. M. Brambilla, M. Cattaneo, L.A Lugiato, R. Pirovano, and F. Prati, A.J Kent, and G.L Oppo, A.B Coates and C.O Weiss, C. Green, E.J D'Angelo and J.R. Tredicce, “Dynamical Transverse Laser Patterns. I. Theory”. *Phys. Rev A* 49, 1427 (1994)
42. A.B Coates, and C.O Weiss, C. Green, E.J D'Angelo, and J.R Tredicce, M. Brambilla, M. Cattaneo, L.A Lugiato, R. Pirovano and F. Prati, A.J Kent, and G.L Oppo, “Dynamical Transverse Laser patterns. II. Experiments”. *Phys. Rev A*, 49, 1452 (1994)
43. Z. Chen, N.B Abraham, S. Balle, E.J D'Angelo, and J.R. Tredicce, “Space-time Dynamics in the Transverse Patterns of a Laser from a model not Restricted a priori to a Few Modes”. *Chaos, Solitons and Fractals*, 4, 1489 (1994)

44. G. Huyet, C. Mathis, H. Grassi, J.R. Tredicce and N.B Abraham, “Regarding Standing vs Traveling waves in the transverse spatial patterns in Homogeneously and Inhomogeneously Broadened lasers”, *Opt. Commun.* 111, 488 (1994)
45. G. Huyet, C.M Martinoni, J.R. Tredicce, and S. Rica, “Spatio-Temporal Dynamics of lasers with a large Fresnel number” *Phys. Rev Lett* 75, 4027 (1995)
46. G.L Lippi, S. Barbay, G.P Barozzi and J.R. Tredicce, “Spontaneous Generation of a Longitudinal Atomic Density Grating in Sodium Vapor”. *Phys. Rev Lett* 76, 2452 (1996)
47. G.Huyet, C. Mathis, and J.R. Tredicce “Dynamics of annular Lasers” *Optics Comm*, 127, 257 (1996).
48. C. Mathis, C.Taggiasco, L. Bertarelli, I. Boscolo, and J.R. Tredicce, “Resonances and Instabilities in a Bidirectional Ring laser” *Physica D*, 96, 242 (1996)
49. G.Huyet, and Tredicce JR “Spatio-Temporal Chaos in the transverse section of Lasers” *Physica D*, 96, 209, (1996).
50. G. Huyet, S. Balle, M. Giudici, C. Green, G. Giacomelli, and Tredicce JR, “low Frequency Fluctuations and Multimode Operation of a Semiconductor Laser with Optical Feedback”, *Opt. Commun.* (1996).
51. Lippi GL, S. Barbay, G. P. Barozzi, and Tredicce JR, “Spontaneous gratings in “hot” atoms and their applications”, *Optical Society of America OSA Tops on Ultracold Atoms and BEC*, Vol.7, 108 (1996).
52. Lippi GL, S. Barbay, G. P. Barozzi, and Tredicce JR, “Spontaneous density grating formation in hot atomic vapor”, in *Optics in 1996, Optics & Photonics News*, p. 13 (1996).
53. Lippi GL, S. Barbay, and Tredicce JR , Reply to comment on “Spontaneous generation of a longitudinal atomic density grating in sodium vapor”, *Phys. Rev. Lett.*, 76, 2452 (1996).
54. G. Huyet, S. Hegarty, M. Giudici, B. de Bruyn, and J. McInerney, “Statistical properties of the dynamics of semiconductor lasers with optical feedback” *Europhysics Lett.* 40, 619 (1997).
55. M. Giudici, C. Green, G. Giacomelli, U. Nespolo, and Tredicce JR, “Andronov Bifurcation and Excitability in Semiconductor Lasers with Optical Feedback”, *Phys. Rev. E* 55, 6414 (1997).
56. P. Couillet, D. Daboussy, and Tredicce JR, “Optical Excitable Waves”, *Phys. Rev. E* 58, 5347 (1998).
57. G. B. Mindlin, A. Duarte, M. Giudici, U. Nespolo, G. Giacomelli, C. Green, and Tredicce JR, “Dynamical model to Describe Low Frequency Fluctuations in Semiconductor Lasers”, *Physica A* 257, 547 (1998).
58. G. Huyet, S. Balle, M. Giudici, C. Green, G. Giacomelli, and Tredicce JR, “Low frequency fluctuations and multimode operation of a semiconductor laser with optical feedback” *Opt. Commun.* 149, 341 (1998).
59. M. C. Eguia, G. B. Mindlin, and M. Giudici, “Low frequency fluctuations in semiconductor lasers with optical feedback are induced with noise” *Phys. Rev. A* 58, 2636 (1998).
60. C. Masoller, A. Figliola, M. Giudici, Tredicce JR, and Abraham NB, “Wavelet analysis of low frequency fluctuations of a semiconductor laser” *Opt. Commun.* 157, 113 (1998).
61. G. Vaschenko, M. Giudici, J. J. Rocca, C. S. Menoni, Tredicce JR, and S. Balle, “Temporal dynamics of semiconductor lasers with optical feedback” *Phys. Rev. Lett.* 81, 5536 (1998).

62. "Reply to Comment on Andronov bifurcation and excitability in semiconductor laser with optical feedback", M. Giudici, C. Green, G. Giacomelli, U. Nespolo, and Tredicce JR, *Phys. Rev. E* 58, 4041 (1998).
63. M. Giudici, Tredicce JR, G. Vaschenko, J.J.Rocca, and C. S. Menoni, "Spatio-Temporal dynamics in vertical cavity surface emitting lasers excited by fast electrical pulses" *Opt. Commun.* 158, 313 (1998).
64. S. Balle, E. Tolkacheva, M. San Miguel, Tredicce JR, J. Martin Regalado, and A. Gahl, "Mechanisms of polarization switching in single-transverse mode vertical-cavity=surface-emitting -lasers: thermal shift and nonlinear semiconductor dynamics" *Opt. Lett.* 24, 1121 (1999).
65. M. Giudici, L. Giuggioli, C. Green, and Tredicce JR, "Dynamical Behavior of Semiconductor Lasers with Frequency Selective Optical Feedback", *Chaos, Solitons and Fractals* 10, 811 (1999).
66. S. Balle, Tredicce JR, T. Ackemann, M. Giudici, and S. Barland, "Effects of optical feedback on Vertical Cavity Surface Emitting Lasers: experiment and model" *Journ. of Opt. Soc. of Am.* B 16, 2114 (1999).
67. A. Afanas'ev, E. G. Tolkacheva, Tredicce JR, and V. M. Volkov, "Spatial Instability of counterpropagating waves in nonlinear distributed feedback structures" *Phys. Rev. A* 60, 2375 (1999).
68. Lippi GL, H. Grassi, T. Ackemann, A. Aumann, B. Schaeppers, J. P. Seipenbusch, and Tredicce JR "Bistability and Transients in CO2 laser patterns" *JEOS B Quant. Semiclass. Optics* 1, 161, (1999).
69. M. San Miguel, S. Balle, J. Molet, C.R. Mirasso, E. G. Tolkacheva, and Tredicce JR, "Combines effects of semiconductor gain dynamics, spin dynamics and thermal shift in polarization selection in VCSELs" in "Physics and Simulation of Optoelectronic Devices", *Proc. SPIE* vol.3944, 242 (2000).
70. G. Giacomelli, M. Giudici, S. Balle, and Tredicce JR, "Experimental evidence of Coherence resonance in an optical system" *Phys. Rev. Lett.* 84, 3298. (2000)
71. Tredicce JR, P. Couillet, M. Giudici, S. Balle, and G. Giacomelli, "Excitability and coherence resonance in optical systems" *Proc. SPIE* vol.3944, 444 (2000)
72. T. Ackemann, S. Barland, M. Cara, S. Balle, Tredicce JR, R. Jager, M. Grabherr, M. Miller, and K. J. Ebeling. "Spatial mode structure of bottom emitting broad area vertical cavity surface emitting lasers" *J. Opt. B: Quantum Semiclass. Opt.* 2, 406 (2000)
73. T. Ackemann, S. Barland, and Tredicce JR, M. Cara and S. Balle, R. Jager, M. Grabherr, M. Miller, and K. J. Ebeling. "Spatial Structure of Broad area vertical cavity regenerative amplifiers" *Opt.Lett.* 25, 814, (2000).
74. T. Ackemann, S. Barland, M. Giudici, and Tredicce JR, S. Balle, R. Jager, M. Grabherr, M. Miller, and K. J. Ebeling., "Patterns in broad-area microcavities" *Phys. Stat. Sol. (b)* 221, 133 (2000).
75. Ch. Krauns, V. Barelko, G. Fabre, J. Tredicce, V. Krinsky, "Fiber Glass Catalysts and Pure Platinum: Laser Ignition of Catalytic Combustion of Propane", *Catalysis Letters* 72, 161 (2001).
76. J M Buldú, J Trull, M C Torrent, J García-Ojalvo, Claudio R Mirasso. Dynamics of modal power distribution in a multimode semiconductor laser with optical feedback. *J Opt B: Quantum Semiclass.* 4:L1-L3 (2002).
77. Yacomotti, G. B. Mindlin, M. Giudici, S. Barland, S. Balle, J.R. Tredicce, Coupled Optical Excitable Cells,

- Phys. Rev. E.* (2002).
78. S. Barland, Tredicce JR, M. Brambilla, Lugiato LA, S. Balle, M. Giudici, T. Maggipinto, L. Spinelli, G. Tissoni, T. Knodl, M. Miller, and R. Jager, "Cavity Solitons as pixels in Semiconductor", *Nature* 445, p.699 (2002).
  79. S. Barland, M. Brambilla, L. Columbo, L. Furfaro, M. Giudici, X. Hacier, R. Kheradmand, L.A. Lugiato, T. Maggipinto, G. Tissoni, J. Tredicce, "Cavity solitons in a VCSEL: reconfigurable micropixel arrays", *Europhysics News*, p.136 (2003).
  80. S. Barland, O. Piro, M. Giudici, Tredicce JR, and S. Balle. "Experimental evidence of van der Pol-Fitzhugh-Nagumo dynamics in semiconductor optical amplifiers" *Phys. Rev. E* 68, 036209 (2003).
  81. S. Barland, F. Marino, M. Giudici, Tredicce JR, and S. Balle. "In situ measurement of cavity length variation across the transverse section of broad-area vertical cavity surface-emitting lasers", *Applied Phys. Lett.* 83, 2303 (2003).
  82. Furfaro L, Pedaci F, Giudici M, Tredicce JR, et al. Mode-switching in semiconductor lasers. *IEEE Journal of Quantum Electronics* 40 (10): 1365-1376 (2004).
  83. Tredicce JR, Lippi GL, P. Mandel, B. Charasse, A. Chevalier, and B. Picque, "Critical slowing down at a Bifurcation Point" *Am J Phys* 72:799-809 (2004).
  84. Yacomotti AM, Furfaro L, Hachair X, Tredicce JR, et al. Dynamics of multimode semiconductor lasers. *Physical Review A* 69 (5): Art. No. 053816 (2004).
  85. Furfaro, L., Pedaci, F., Javaloyes, J., Hachair, X., Giudici, M., Balle, S., Tredicce, J. "Modal Switching in Quantum-Well Semiconductor Lasers With Weak Optical Feedback" *IEEE Journal of Quantum Electronics* 41: 609- 618 (2005)
  86. S. Barland, X. Hachair, M. Giudici, S. Balle, J.R. Tredicce, G. Tissoni, L. Spinelli, L. Lugiato, and M. Brambilla. "Spatial decorrelation in broad-area edge-emitting semiconductor amplifiers" *Eur. Phys. J. D* 32, 75-82 (2005)
  87. F. Pedaci, M. Giudici, J.R. Tredicce, et G. Giacomelli. "Stochastic resonance in bulk semiconductor lasers" *Phys. Rev. E* 71 (3): Art. No. 036125 Part 2 (2005)
  88. J. Tredicce, M. Giudici, and P. Glorieux. "Comment on "Formation of repetitively nanosecond spatial solitons in a saturable absorber Q-switched laser"" *Phys. Rev. Lett.* 94 (24): Art. No. 249401 (2005)
  89. X. Hachair, S. Barland, J. R. Tredicce, and G.L. Lippi. "Optimization of the switch-on and switch-off transition in a commercial laser" *Appl. Opt.* 44 (22): 4761-4774 (2005)
  90. X. Hachair, L. Furfaro, J. Javaloyes, M. Giudici, S. Balle, J. Tredicce, G. Tissoni, L. A. Lugiato, M. Brambilla, and T. Maggipinto. "Cavity-solitons switching in semiconductor microcavities" *Phys. Rev. A* 72 (1): Art. No. 013815 Part A-B (2005).
  91. F. Pedaci, M. Giudici, J.R. Tredicce, and G. Giacomelli. "Experimental analysis of mode-hopping in bulk semiconductor lasers" *Appl. Phys. B-LASERS AND OPTICS* 81 (7): 993-1000 (2005)
  92. F. Pedaci, S. Lepri, S. Balle, G. Giacomelli, M. Giudici, and J. R. Tredicce. "Multiplicative noise in the longitudinal mode dynamics of a bulk semiconductor laser" *Phys. Rev. E* 73 (4): Art. No. 041101 Part 1 (2006).

93. X. Hachair, F. Pedaci, E. Caboche, S. Barland, M. Giudici, J.R. Tredicce, F. Prati, G. Tissoni, R. Kheradmand, L.A. Lugiato, I. Protsenko, and M. Brambilla. "Cavity solitons in a driven VCSEL above threshold" IEEE J. of Selected Topics in Quant. Electron. 12 (3): 339-351 (2006).
94. F. Pedaci, P. Genevet, S. Barland, M. Giudici, and J.R. Tredicce "Positioning cavity solitons with a phase mask" Appl. Phys. Lett. 89 (22): Art. No. 221111 (2006).
95. F. Pedaci, S. Barland, E. Caboche, P. Genevet, M. Giudici, J. R. Tredicce, T. Ackemann, A. J. Scroggie, W. J. Firth, G. L. Oppo, G. Tissoni, R. Jaeger. "All-optical delay line using semiconductor cavity solitons". Appl. Phys. Lett. 92 Art. No.011101 (2008).
96. Columbo L., Gil L., Tredicce J. "Could Cavity Solitons Exist in Bidirectional Ring Lasers?" Opt. Lett. 33, 995 (2008)
97. Genevet P, Barland S, Giudici M and Tredicce JR "Cavity Soliton Laser Based on Mutually Coupled Semiconductor Microresonators" Phys. Rev. Lett. 101, 123905 (2008)
98. Pedaci F, Tissoni G, Barland S, Giudici M, and Tredicce JR "Mapping Local Defects of Extended Media using Localized Structures" Appl. Phys. Lett. 93, 111104 (2008)
99. Genevet P, Barland S, Giudici M, Tredicce JR "Stationary localized structures and pulsing structures in a cavity soliton laser" Phys. Rev. A 79, 033819 (2009)
100. Caboche E, Pedaci F, Genevet P, Barland S, Giudici M, Tredicce JR, Tissoni G, Lugiato L "Microresonator Defects as Sources of Drifting Cavity Solitons", Phys. Rev. Lett. 102, 163901 (2009).
101. Caboche E, Barland S, Giudici M, Tredicce J, Tissoni G, Lugiato L "Cavity-soliton motion in the presence of device defects" Phys. Rev. A 80, 053814 (2009)
102. Genevet P, Columbo L, Barland S, Giudici M, Gil L, Tredicce JR. "[Multistable monochromatic laser solitons](#)" Phys. Rev. A 81, 053839 (2010)
103. Colombo L, Gil L, Tredicce JR. "Nucleation of wave defects and formation of optical localized structures in bi-directional ring lasers" EPJD 58, 227 (2010)
104. Genevet P, Barland S, Giudici M, Tredicce JR. "Bistable and Addressable Localized Vortices in Semiconductor Lasers" Phys. Rev. Lett. 104, 223902 (2010)
105. Genevet P, Turconi M, Barland S, Giudici M, Tredicce JR. "Mutual coherence of laser solitons in coupled semiconductor resonators" EPJD 59, 109 (2010)

#### Patents

Designation:	Inventor
Title:	Electro-optic equipment for detection of position and diameter, and for automatic search of a channel of tissue on corduroy F.T. Arecchi, C. Castellini, F. Francini, and J.R. Tredicce
Date of Application:	1982
Designation:	Inventor

Title: Localized states in semiconductor lasers with frequency-selective feedback for all-optical switching, storage and processing  
T. Ackemann and J. R. Tredicce  
Date of Application: 2004

#### Non-Peer-Reviewed Publications

1. Abraham NB, S. Balle, Z. Chen, E. J. D'Angelo, and Tredicce JR, "Defects Dynamics in the evolution of the transverse pattern of a Laser", *SPIE Proc. of Intn'l conference on Quantum Electronics*, Leningrad (URSS), Vol 1840, 156 (1992)
2. Z. Chen, N.B Abraham, S. Balle, E.J D'Angelo, and J.R. Tredicce. "Transverse Pettern Development, Phase Vortex Formation, and Space Time Dynamics in a laser model" *SPIE*. Vol 2099, 1 (1992)
3. J.R. Tredicce, S. barbay, G.P Barozzi, G.L Lippi, G. Huyet, C. Mathis," Longitudinal and Transverse Spatial Instabilities". Proc. of the "Varenna School" July 1995. *Europhys. Lett* 1996
4. J.R. Tredicce, G. Huyet, C.Mathis, "Transverse Instabilities in Optical Systems" Proc. Conf "Journées de Maxwell" Sophia Antipolis, Oct 1995.
5. Lippi GL, N. Dokhane, X. Hachair, S. Barland, and Tredicce JR. "High Speed Direct Modulation of Semiconductor Lasers" *Proc. SPIE* vol 4871 (2002).
6. X. Hachair, N. Dokhane, S. Barland, J. L. Meunier, Tredicce JR, and Lippi GL, "Control of Lasers: Steering the Transition between Different States" *Proc. of the World Multiconference on Systemics, Cybernetics, and Informatics* (SCI 2002).

#### Chapters

1. Arecchi FT, C. Castellini, and Tredicce JR, "Time-dependent Effects in Laser Heating of Organic Materials" in *Physical Processes in Laser Material Interactions* (Plenum Press, N.Y. 1983).
2. Arecchi FT, Lippi GL, Puccioni GP, and Tredicce JR "Route to Chaos in a CO2 laser with Injected Signal", in *Coherence and Quantum Optics V*, edited by L. Mandel and E. Wolf (Plenum Press, N.Y. 1984), p.1227.
3. Arecchi FT, Abraham NB, W. Gadomski, Lippi GL, R. Meucci, A. Poggi, Puccioni GP, N. Ridi, and Tredicce JR, "Instabilities and Chaos in Laser Systems: A Review of Studies on CO2 Lasers", in *Advances in Non-Linear Dynamics and Stochastic Processes*, R. Livi and A. Politi eds. (World Scientific Publications, Singapore, 1985)
4. A. Poggi, Puccioni GP, W. Gadomski, Arecchi FT, and Tredicce JR, "Laser with Modulated Losses: A complete description of its periodic and aperiodic behavior", in *Optical Instabilities*, R. W. Boyd, M. G. Raymer, and Narducci LM, eds. (Cambridge University Press, New York, 1985)
5. Tredicce JR, Arecchi FT, W. Gadomski, A. Poggi, and Puccioni GP, "Characterization of a Strange Attractor in an Optical System" in *Optical Bistability III*, H. M. Gibbs, P. Mandel, N. Peyghambarian, and S. D. Smith eds. , p. 311 (Springer-Verlag, N. Y. 1986)
6. Lugiato LA, Bandy DK, Narducci LM, H. Sadiky, Tredicce JR, and Abraham NB, " Optical Bistability due to Mode-Mode Competition in a Homogeneously Broadened Laser", in *Optical Bistability III* , H. M. Gibbs, P. Mandel, N. Peyghambarian, and S. D. Smith, p.293 (Springer Verlag, N.Y. 1986)

7. Tredicce JR, H. Sadiky, Narducci LM, and Bandy DK, “Instabilities in Laser Systems at Low Pumping Levels” *Optical Chaos*, J. Chrostowski, and Abraham NB, Eds., SPIE Vol. 667 (SPIE Bellingham, Wa.,1986), p. 36.
8. Lippi GL, Abraham NB, Puccioni GP, Tredicce JR, Narducci LM, and Arecchi FT, “Spontaneous Oscillations in a Single Mode CO2 Laser in a Fabry-Perot Cavity” *Optical Chaos*, J. Chrostowski, and Abraham NB, Eds., SPIE Vol. 667 (SPIE Bellingham, Wa.,1986), p. 41.
9. Tredicce JR, R. Gilmore, H. G. Solari, and E. Eschenazi, “Winding Numbers and Collisions Between Orbits in a Laser System” *Fundamentals of Quantum Optics II*, F. Ehlotzky, Ed., in “Lecture Notes in Physics” Vol.282 (Springer-Verlag, Berlin, 1987) p.273.
10. Lugiato LA, Narducci LM, Bandy DK, Tredicce JR, and P. Ru, “Recent Advances in Laser Instabilities” in *Lasers and Synergetics*, R. Graham, and A. Wunderlin, Eds. (Springer-Verlag, Berlin, 1987), p.24.
11. Lugiato LA, Narducci LM, Tredicce JR, and Bandy DK, “25 Years of Laser Instabilities”, in *Instabilities and Chaos in Quantum Optics II*, Abraham NB, Arecchi FT, and Lugiato LA, Eds. NATO-ASI series B, Vol.177 (Plenum Press, New York, 1987), p.1.
12. Lugiato LA, W. Kaige, Narducci LM, G. L.Oppo, M. A. Pernigo, Tredicce JR, Bandy DK, and F. Prati, “Cooperative frequency Locking and Spatial Structures in Lasers”, in *Neural and Synergetic Computers*, H. Haken, Ed. Vol. 42 (Springer-Verlag, Berlin, 1988), p.252.
13. Tredicce JR, and Narducci LM, “Emergence of Chaos in Laser Systems and the Development of Diagnostic Techniques”, in *Directions in Chaos*, Hao Bai Lin, Ed. (World Scientific Publishing Co., Singapore, 1988), p. 148.
14. Lugiato LA, C. Oldano, L. Sartirana, W. Kaige, Narducci LM, G. L.Oppo, M. A. Pernigo, Tredicce JR, F. Prati, and G. Broggi, “Spontaneous Symmetry Breaking and Spatial Structures in Optical Systems”, in *Far from Equilibrium Phase Transitions*, L. Garrido, Ed., “Lecture Notes in Physics” Vol. 319 (Springer-Verlag, Berlin, 1988), p.263.
15. Narducci LM, G. L. Oppo, Tredicce JR, Lugiato LA, and F. Prati, “Spatial Instabilities and Symmetry Breaking in Lasers” in *Coherence and Quantum Optics VI*, J. H. Eberly et al., eds., Plenum Press, New York (1990) Page 799.
16. Tredicce JR, and Abraham NB, “Experimental Measurements to Identify and/or Characterize Chaotic Signals” in *Lasers and Quantum Optics*, L. M Narducci, E. J. Quel, and Tredicce JR, Eds. (World Scientific Publishing Co., Singapore, 1990) .
17. Tredicce JR, E. J. D'Angelo, C. Green, G. Mindlin, Narducci LM, and G. L. Oppo. “Lasers as a test bench for theories of non-equilibrium structures”. *Proceedings of the 3rd.International Workshop on Instabilities and Non-equilibrium structures*. E. Tirapegui and W. Zoller (eds.), Kluwer Academic Publishers, 239 (1991).
18. C. Green, E. J. D'Angelo, G. Mindlin, Narducci LM, G. L. Oppo, H. Solari and Tredicce JR. “Experimental Study of the Evolution of Laser Intensity Profiles: from Gaussian to Turbulent, *Proc. of the Conference on Non-Linear Dynamics of Optical Systems*, Abraham NB, E. Arimondo, and P. Mandel, eds.
19. Tredicce JR, “Excitability in Laser Systems: the Experimental Side” in *Fundamentals Issues in Nonlinear Laser Dynamics* B. Krauskopf and D. Lenstra, eds., Am. Inst. Of Physics, Vol. 548 (New York, 2000).

20. L. A. Lugiato, F. Prati, G. Tissoni, M. Brambilla, S. Barland, M. Giudici, and J. Tredicce. "Cavity Solitons in Semiconductor Devices" N.N. Akhmediev, A. Ankiewicz Eds. Lecture Notes in Physics 751, Springer (2008).
21. S. Barland, E. Caboche, X. Hachair, M. Giudici, and J. R. Tredicce. "Algunos Detalles sobre la Generacion de Solitones de Cavidad en Semiconductores" in "Laseres, Desarrollos y Aplicaciones" L. Azcarate, P. Diodati, E. Quel, and V. Slezak Eds. UNSAM Edita, (Buenos Aires, 2007).

### Books

1. "Lasers and Quantum Optics", Proceedings of a Summer School in Mar del Plata, Argentina, Narducci LM, E. J. Quel, and Tredicce JR, Eds., World Scientific Publishing Co., Singapore, (1990)

### Abstracts (current)

1. "Caracterizacion de un Laser de Ar+ pulsado" H. Mancini, E. Petriella, and Tredicce JR, Reunion Nacional de Fisica (National Meeting of Physics) of the Argentinian Physical Society, Buenos Aires, Argentina, November 1978.
2. "Propagazione di un modo TEM<sub>01+10</sub> e sua Distribuzione di Intensita", C. Castellini and Tredicce JR, II Congresso Nazionale di Elettronica Quantistica e Plasmi (2nd National Meeting of Quantum Electronics and Plasma") Palermo, Italy, May 1980.
3. "Intensity Distribution of a Propagating TEM<sub>01+10</sub> mode", C. Castellini and Tredicce JR, European Conference on Optical Systems and Applications, Utrecht, September 1980.
4. "Time Dependent Effects in Laser Heating of Organic Materials", Arecchi FT, C. Castellini, H. Mancini, and Tredicce JR, ICO XII - Graz - Austria - September 1981.
5. "Chaos in a Laser with an Injected Signal" Arecchi FT, Lippi GL, Puccioni GP and Tredicce JR NATO Workshop on "Testing in Nonlinear Dynamics", Haverford, Pennsylvania, U.S.A., June 1983.
6. "Route to Chaos in a CO<sub>2</sub> laser with Injected Signal", Arecchi FT, Lippi GL, Puccioni GP, and Tredicce JR, V Rochester Conference on Coherence and Quantum Optics Rochester, U.S.A., June 1983
7. "Turbulence and 1/f Noise in Quantum Optics", Gordon Conference on "Nonlinear Optics", Wolfeboro, N.H., U.S.A. August 1983. (Invited Paper).
8. "Chaotic Behavior of lasers with Injected Signal", Arecchi FT, Lippi GL, Puccioni GP, and Tredicce JR, Congresso della Societa Italiana di Fisica (Meeting of the Italian Physical Society), Messina, 1983.
9. "Dynamical Behavior of Laser with Injected Signal", Arecchi FT, Lippi GL, and Tredicce JR, Fundamentals of Quantum Optics, Obergurgl, Austria, February 1984
10. "Aperiodic Bistable Switching in a CO<sub>2</sub> Ring Laser", Abraham NB, Arecchi FT, Lippi GL, Puccioni GP, and J. R. Tredicce, Royal Society Meeting on "Optical Bistability, Dynamic Nonlinearities, and Photonic Logic", London, U. K. , March 1984.
11. "Instabilities in a CO<sub>2</sub> Laser with Injected Signal" Arecchi FT, G.L. Lippi, Puccioni GP, and Tredicce JR, Workshop on "Optical Bistability", Edinburgh, U.K., March 1984.

12. "Spontaneous Oscillations, Generalized Multistability and Intermittency Route to Chaos in a Bidirectional CO2 Ring Laser", J. R. Tredicce, Arecchi FT, G. Lippi, and Abraham NB. IQEC XII ( 12th International Conference on Quantum Electronics) Los Angeles, CA. U.S.A., June 1984. (Invited paper)
13. "Dynamical Interaction Leading to Regular Pulsations and Chaos in a Bidirectional CO2 Ring Laser" , Abraham NB, Arecchi FT, Lippi GL, and Tredicce JR, International Conference on Infrared Physics, Zurich, Switzerland, July 1984.
14. "Dimension and Entropy Measurements in Laser Systems", Congress de la Societe Francaise de Physique (Meeting of the French Physical Society), Nice, France. August 1985. (Invited Paper).
15. "Multimode Instabilities in a Homogeneously Broadened Ring Laser" Bandy DK, Narducci LM, H. Sadiky, Tredicce JR, and Lugiato LA, Annual Meeting of the Optical Society of America. Washington, D.C. October 1985.
16. "Bistability and Mode-Mode Competition in a Homogeneously Broadened CO2 laser", Tredicce JR, A. Poggi, Puccioni GP, Lippi GL, Arecchi FT, and W. Gadomski, Annual Meeting of the Optical Society of America. Washington, D.C. October 1985.
17. "Instabilities in Laser Systems: Plane Wave and Gaussian Transverse Profiles", Narducci LM, D.K. Bandy, Tredicce JR, and Lugiato LA, IQEC13 (International Conference on Quantum Electronics), San Francisco, June 1986.(Invited paper)
18. "Dimensionality Measurement in Laser Systems", MECO'85, Aussois, France, March 1985, (Invited paper).
19. "Instabilities and Chaos in CO2 Laser Systems", Puccioni GP, and Tredicce JR Symposium in Non-linear Dynamics, Florence, January 1985.
20. "Intracavity CO2 Laser Modulation: Periodic and Aperiodic Behavior", Tredicce JR, Puccioni GP, A. Poggi, W. Gadomski, and Arecchi FT, CLEO'85, Baltimore , MD, May 1985.
21. "Mode-Mode Competition in a Homogeneously Broadened Ring Laser" Narducci LM, Tredicce JR, Lugiato LA , and Bandy DK. International Meeting on "Instabilities and Dynamics of Laser and Nonlinear Optical Systems", Rochester, N.Y., June 1985.
22. "Steady-state and Stability Properties of a Multimode Inhomogeneously Broadened Laser" Narducci LM, Tredicce JR, Bandy DK and Lugiato LA, International Meeting on "Instabilities and Dynamics of Laser and Nonlinear Optical Systems", Rochester, N.Y., June 1985.
23. "Instabilities in Quantum Optical Systems with a modulated Feedback", G. Delfino, R. Meucci, and Tredicce JR, International Meeting on "Instabilities and Dynamics of Laser and Nonlinear Optical Systems", Rochester, N.Y., June 1985.
24. "Laser with Modulated Losses: A complete Description of its Periodic and Aperiodic Behavior", Tredicce JR, A. Poggi, Puccioni GP, W. Gadomski and Arecchi FT), International Meeting on "Instabilities and Dynamics of Laser and Nonlinear Optical Systems", Rochester, N. Y., June 1985.
25. "Multimode Instabilities in a Homogeneously Broadened Ring Laser", Bandy DK, Narducci LM, H. Sadiky, Tredicce JR, and Lugiato LA, Optical Society of America, Annual Meeting, Washington D.C. (1985).
26. "Bistability and Mode-Mode Competition in a Homogeneously Broadened CO2 Laser" , Tredicce JR, W. Gadomski, A. Poggi, Puccioni GP, Lippi GL, and Arecchi FT, Optical Society of America, Annual Meeting, Washington D.C., October 1985.

27. "The Single-Mode Approximation in Laser Physics: A Critique and Improved Model", Narducci LM, Bandy DK, Tredicce JR, and Lugiato LA, First International Laser Science Conference, Dallas, Texas, October 1985.
28. "Low Dimensional Chaos in a CO2 Laser System", First International Laser Science Conference, Dallas, Texas, October 1985.(Invited paper).
29. "Optical Bistability and Instabilities due to Mode-Mode Competition in a Homogeneously Broadened Ring Laser", Lugiato LA, Bandy DK, Narducci LM, H. Sadiqy, and Tredicce JR, Topical Meeting on Optical Bistability, Tucson, Arizona, November 1985.
30. "Characterization of A Strange Attractor in an Optical System", Tredicce JR, A. Poggi, W. Gadomski, Arecchi FT, and Puccioni GP, Topical Meeting on Optical Bistability, Tucson, Arizona, November 1985.
31. "Instabilities in Laser Systems at Low Pumping Levels", Tredicce JR, H. Sadiqy, Narducci LM, and Bandy DK, Meeting on "Optical Chaos", Quebec, Canada, June 1986.
32. "Spontaneous Oscillations in a Single Mode CO2 Laser in a Fabry-Perot Cavity", Lippi GL, Abraham NB, Puccioni GP, Tredicce JR, Narducci LM, and Arecchi FT, Meeting on "Optical Chaos", Quebec, Canada, June 1986.
33. "Transient Bistability in Ar+ lasers", W. Scharpf, M. Squicciarini, C. Green, and Narducci LM, Annual Meeting of the Optical Society of America, Seattle, Washington, U.S.A., October 1986.
34. "The effect of a Transverse Beam Profile on the Dynamics of a Homogeneously Broadened Ring Laser", Lugiato LA, L. M. Narducci, Tredicce JR, and Bandy DK, Annual Meeting of the Optical Society of America, Seattle, Washington, U.S.A., October 1986.
35. "Transverse Effects and Laser Instabilities", Lugiato LA, Bandy DK, Narducci LM, P. Ru, and Tredicce JR, International Meeting on Optical Instabilities II, Il Ciocco, Lucca, Italy, July 1987.
36. "Relative Rotation Rates for Periodically Driven Nonlinear Systems", H. Solari, R. Gilmore, W. Scharpf, C. Green, E. Quel, and Tredicce JR, International Meeting on Optical Instabilities II, Il Ciocco, Lucca, Italy, July 1987.
37. "Nonlinear Dynamics in a Fabry-Perot Resonator", L. A. Lugiato, e. Dougherty, Narducci LM, and Tredicce JR, International Conference on Quantum Electronics, IQEC'87, Baltimore, Maryland, U. S. A., May 1987.
38. "Experimental Evidence of Transverse Instabilities in a CO2 Laser", Tredicce JR, E. J. Quel, C. Green, and L. M. Narducci, EEC Conference on Dynamics of Nonlinear Optical Systems, Torino, Italy, March 1987 (Invited paper).
39. "Winding Numbers in a Laser with Modulated Losses", H. Solari, E. Eschenazi, R. Gilmore, and Tredicce JR, International Conference on Fundamentals of Quantum Optics II, Obergurgl, Austria, February 1987.
40. "Dynamics of a Driven Laser System", Tredicce JR, LXXth Meeting of the "Asociacion Fisica Argentina" (Argentinian Physical Society), Bariloche, Argentina, September 1987.
41. "Low Threshold Instabilities in Lasers", Lugiato LA, F. Prati, Narducci LM, P. Ru, Tredicce JR, and Bandy DK, Annual Meeting of the Optical Society of America, Rochester, October 1987.

42. "Symmetry breaking Instabilities in Optical Systems", Lugiato LA, K. Wang, Narducci LM, G. L. Oppo, M. A. Pernigo, Tredicce JR, F. Prati, and Bandy DK, European Quantum Electronics Conference, Hannover, Germany, September 1988
43. "Spatial Pattern Formation in Lasers and Cooperative Frequency Locking", Lugiato LA, C. Oldano, W. Kaige, Narducci LM, G. L. Oppo, M. A. Pernigo, Tredicce JR, and F. Prati, Annual Meeting of the Optical Society of America, Santa Clara, California, U. S. A., November 1988.
44. "Experimental Evidence of Laser Instabilities due to Transverse Effects", E. J. Quel, Tredicce JR, A. Ghazzawi, C. Green, M. A. Pernigo, G. L. Oppo, L. M. Narducci, and Lugiato LA, Annual Meeting of the Optical Society of America, Santa Clara, California, U. S. A., November 1988.
45. California, U. S. A., November 1988.
46. "Fluctuations of the Delay Bifurcation in an Ar<sup>+</sup> laser", D. Bromley, Tredicce JR, Narducci LM, and W. Scharpf, Annual Meeting of the Optical Society of America, Santa Clara, California, U. S. A., November 1988.
47. "Two Dimensional Model for the Vibrational-Rotational Transitions in a CO<sub>2</sub> laser", G. L. Oppo, Narducci LM, and Tredicce JR, Annual Meeting of the Optical Society of America, Santa Clara, California, U. S. A., November 1988.
48. "Self-pulsing in a Hybrid Bistable System without Delayed Feedback", F. Narducci, D. Bromley, G. L. Oppo, and Tredicce JR, Annual Meeting of the Optical Society of America, Santa Clara, California, U. S. A., November 1988.
49. "Transverse Effects in a Homogeneously Broadened Laser: Spatial Instabilities", Bandy DK, Lugiato LA, Narducci LM, and Tredicce JR, Fourth International Laser Science Conference, Atlanta, Ga, September 1988.
50. "Chaos in Lasers", Tredicce JR, International Workshop on Quantum Nonintegrability, Philadelphia, Pa. U. S. A., February 1989 (Invited paper).
51. "Symmetry Breaking and the Intensity Patterns of Lasers", C. Green, and Tredicce JR, International Conference on Noise and Chaos in Dynamical Systems, Torino, Italy, March 1989 (Invited paper).
52. "Theoretical Model of a Hybrid Laser", R. Alvarez, D. Bromley, and Tredicce JR, Annual Meeting of the Optical Society of America, Orlando, Florida, October 1989.
53. "Experimental Evidence of Broken Symmetries and Traveling waves in the Spatial Patterns of Lasers", C. Green, Narducci LM, and Tredicce JR, Annual Meeting of the Optical Society of America, Orlando, Florida, October 1989.
54. "Spatial Instabilities and Symmetry Breaking Effects in Lasers", Narducci LM, G. L. Oppo, Tredicce JR, and Lugiato LA, Annual Meeting of the Optical Society of America, Orlando, Florida, October 1989.
55. "Sub-natural Resonance Fluorescence Spectra", Narducci LM, G. L. Oppo, P. Ru, Tredicce JR, and M. O. Scully, Annual Meeting of the Optical Society of America, Orlando, Florida, October 1989.
56. "Experimental Evidence of Optical Vortices", Tredicce JR, C. Green, E. D'Angelo, M. Ocola, and Narducci LM, Third International Workshop on Instabilities and Nonequilibrium Structures, Valparaiso, Chile, December 1989 (Invited paper).

57. "Spatial Instabilities and Symmetry Breaking in Lasers and Other Optical Systems", Lugiato LA, Narducci LM, G. L. Oppo, and Tredicce JR, Coherence and Quantum Optics VI, Rochester, New York, U. S. A., June 1989 (Invited paper).
58. "Dynamics of Optical Vortices in Lasers", L. Gil, P. Couillet, G. L. Oppo, Narducci LM, and Tredicce JR, Conference on Non-Linear Dynamics of Optical Systems, Afton, OK, U.S.A. , June 1990.
59. Experimental Study of the Evolution of Laser Intensity profiles: from Gaussian to Turbulent", C. Green, E. J. D'Angelo, G. B. Mindlin, Narducci LM, G. L. Oppo, H. Solari, and Tredicce JR, Conference on Non-Linear Dynamics of Optical Systems, Afton, OK, U.S.A. , June 1990.
60. "Complex Spatio-Temporal Dynamics in Lasers", J.R. Tredicce, C. Green, E. J. D'Angelo, and Narducci LM, Annual Meeting of the Optical Society of America, Boston, November 1990. (Invited Paper).
61. "Defect Mediated Turbulence in Lasers: experiment and theory", C. Green, E. J. D'Angelo, L. Gil, Narducci LM, G. L. Oppo, and Tredicce JR, Annual Meeting of the Optical Society of America, Boston, November 1990.
62. "Sub-natural Spontaneous Emission Spectra in Driven Atoms: the V-model" Narducci LM, P. Ru, Tredicce JR, G. L. Oppo, and M. O. Scully, Annual Meeting of the Optical Society of America, Boston, November 1990.
63. "Spatio-temporal structures and turbulence in Laser systems" E. J. D'Angelo, C. Green, and Tredicce JR, Annual Meeting of the Optical Society of America, San Francisco, October 1991.
64. "Defect mediated turbulence in optical systems", E. J. D'Angelo, Tredicce JR, G. L. Oppo, and L. Gil, Annual Meeting of the Optical Society of America, San Francisco, October 1991.
65. "Anticipation and delay at the bifurcation threshold of Class B lasers", D. Bromley, R. Alvarez, E. J. D'Angelo, and Tredicce JR, Annual Meeting of the Optical Society of America, San Francisco, October 1991.
66. "Influence of defects on the dynamical behavior of spatial structures in lasers", E. J. D'Angelo, Tredicce JR, C. Green, and Abraham NB, NATO Workshop on Nonvariational Aspects of Nonlinear Systems, Estella, Spain, September 1991.
67. "Standing waves, travelling waves and sources and sinks of waves in Annular lasers", Tredicce JR, E. J. D'Angelo, C. Green, L. Gil, and E. Izaguirre, NATO Workshop on Nonvariational Aspects of Nonlinear Systems, Estella, Spain, September 1991.
68. "The role played by symmetry imperfections on transverse patterns of Lasers" Tredicce JR, E. J. D'Angelo, E. Izaguirre, G. Mindlin, G. Huyet, and L. Gil, Intn'l Conference on Quantum Electronics (IQEC'92) , Wien, Austria, June 1992.
69. "Defect Dynamics in the evolution of the transverse Pattern of a Laser", Abraham NB, Z. Chen, S. Balle, E. J. D'Angelo, and Tredicce JR, International Conference on Nonlinear Dynamics of Optical Systems, Alspach, Austria, June 1992.
70. "Formation of spatio-temporal structures in Lasers", Lugiato LA, M. Brambilla, R. Prati, G. L. Oppo, C. O. Weiss, and Tredicce JR, International Conference on Nonlinear Dynamics of Optical Systems, Alspach, Austria, June 1992.

71. "Transverse Dynamics of lasers", Meeting of Europ network on Nonlinear Dynamics in Optics. Palma de mallorca, Spain 1993.
72. "Turbulence in Optical Systems", Meeting of European network on Nonlinear Dynamics in optics, Lille, France 1994.
73. "Transverse Structures of a Ring laser with odd number of mirrors", C.Mathis, C. Taggiasco, L. Bertarelli, and J.R Tredicce. NLDOS, Bryn Mawr, USA, June 1995.
74. "Correlation Measurements on a Laser with High Fresnel Number", G. Huyet, C. Martinomi and J.R Tredicce. NLDOS, Bryn Mawr, USA, June 1995.
75. "Reseaux de densite dans des atomes chauds", G.L Lippi, S. Barbay, G.P Barozzi, L. Gil; A. roux and J.R. Tredicce. "COLOQ 4" sur les lasers et l'Optique Quantique. Palaiseau, France. Nov 1995
76. "Structure d'un faisceau laser de grande ouverture. cavites Perot-Fabry et en anneau", G. Huyet, C. Mathis, S. Rica, C. Taggiasco, R. Alvarez and J.R. Tredicce"COLOQ 4" sur les lasers et l'Optique Quantique. Palaiseau, France. Nov 1995
77. "Comportement dynamique d'un laser a semiconducteur: exemple d'excitabilite en optique ", M. Giudici, U. Nespolo, H. Grassi et J.R. Tredicce,"COLOQ 4" sur les lasers et l'Optique Quantique. Palaiseau, France. Nov 1995
78. "Excitability in vertical cavity surface emitter lasers" U. Nespolo, M. Giudici, C. Green and Tredicce JR, EQEC'96, Hamburg, Germany September 1996.
79. "Non-Linear Dynamics of Semiconductor Lasers" Meeting of the European Network on Semiconductor lasers, Palma de Mallorca, Spain, April 1996.
80. Dynamical density grating in a "hot" atomic vapor", Lippi G.-L., Barbay S., Barozzi G.P., Roux A., Tredicce J.R., EQEC'96 (Hambourg, RFA, Sept. 1996)
81. "Probe amplification in the presence of a spatial density grating", G.P. Barozzi, S. Barbay, G.L. Lippi, and J.R. Tredicce, NATO Advanced Study Institute, 47th SUSSP Summer School : New Perspectives in Lasers Sources and Applications, June 25th - July 8th 96 (St. Andrews, Scotland)
82. "Interaction between polarisation, population inversion and atomic density gratings in inhomogeneously broadened sodium atoms driven by a strong field", 5th conference on Lasers and Quantum Optics (COLOQ5), Sept. 97 (Strasbourg, France).
83. "Experimental evidence of gain due to atomic recoil", G.L. Lippi, G.P. Barozzi, S. Barbay, and J.R. Tredicce, Lasers and Electro-Optics Society (9th Annual Meeting), Boston (MA, USA), 18th - 21st Nov. 96.
84. "Dynamical Behavior of Semiconductor Lasers with Optical Feedback", Latin American Workshop on Nonlinear Phenomena, Canela, Brasil, October 1997
85. "Recent Advances on Spatio-Temporal behavior of Nonlinear Systems", (Invited Talk), Heraeus Symposium on Spatio-Temporal Dynamics of Optical Systems, Bad Honnef (Germany), June 1997.
86. "Probe amplification in the presence of a spatial density grating", G.P. Barozzi, S. Barbay, G.L. Lippi, and J.R. Tredicce, NATO Advanced Study Institute, 47th SUSSP Summer School : New Perspectives in Lasers Sources and Applications, June 25th - July 8th 96 (St. Andrews, Scotland) .

87. "Longitudinal dynamical patterns", G.L. Lippi, S. Barbay, G.P. Barozzi, G. Fabre, and J.R. Tredicce, 178. WE-Heraeus Seminar Pattern formation in nonlinear optical systems, Bad Honnef (Germany) 23rd - 25th June 97.
88. "Nonlinear Dynamics of Semiconductor Lasers with Optical feedback", M. Giudici, L. Giuggioli, S. Balle, and Tredicce JR, V Latin-American Workshop on Nonlinear Phenomena - LAWNP'97, Canela, Brazil, September 1997. Invited Talk
89. "Spatio-Temporal Dynamics in Vertical cavity surface emitting lasers excited by fast electrical pulses" M. Giudici, Tredicce JR, G. Vaschenko, J. Rocca, and C. Menoni. Intn'l Conference on Patterns in NonLinear Optical Systems, Alicante, May 1998, Poster
90. "Optical feedback in Semiconductor Lasers", G. Huyet, M. Giudici, S. Hegarty, J. McInerney, S. Balle. CLEO-EQEC 1998, Glasgow, Scotland, UK, September 1998. Invited Talk
91. "Atomic Motion and Pump Probe Spectroscopy" S. Barbay, G. Fabre, Lippi GL, Tredicce JR, CLEO-EQEC 1998, Glasgow, Scotland, UK, September 1998, Poster
92. "Effects of Optical Feedback on Vertical Cavity Surface Emitting Lasers : Experiment and Model" S. Balle, Tredicce JR, M. Giudici, T. Ackemann, and S. Barland, Lasers and Electro-Optics Society 1998 (LEOS'98), December 1998, Orlando, Fl., USA, Invited talk
93. "Spatial structures in broad area vertical cavity semiconductor lasers", T. Ackemann, S. Barland, M. Cara, and J.R.Tredicce, CLEO/QELS 1999, Baltimore, USA, May 1999, Oral presentation
94. "Excitable Behavior in Semiconductor Lasers", Tredicce JR, and M. Giudici, 5<sup>th</sup>. SIAM Conference on Applications of Dynamical Systems, May 23-27, 1999 ; Snowbird, Utah, USA, Invited Talk
95. "Spatial Structures and their control in Injection Locked broad area VCSELs" T. Ackemann, S. Barland, M. Cara, M. Giudici, and S. Balle. Nonlinear Guided Waves and their Applications September, 1999; Dijon, France. Oral presentation
96. "Cavity Solitons in semiconductor Microcavities" L. Spinelli, Lugiato LA, T. Ackemann, and Tredicce JR, 1999 OSA Annual Meeting and ILS-XV, September 1999, Santa Clara, Ca. USA, Poster
97. "Spatial Structures and Solitons in Optical Systems using VCSELs" T. Ackemann, S. Barland, M. Cara, S. Balle and Tredicce JR, Control of Complex Behaviour in Optical Systems and Applications (COCOS), October 1999, Muenster, Germany, Invited Talk
98. "Polarization Dynamics in VCSELs with Optical Feedback", S. Barland, T. Ackemann, M Giudici, S. Balle, and Tredicce JR, Control of Complex Behaviour in Optical Systems and Applications (COCOS), October 1999, Muenster, Germany, Poster
99. "Experimental Evidence of Coherence Resonance in an Optical System", G. Giacomelli, M. Giudici, S. Balle, and Tredicce JR Control of Complex Behaviour in Optical Systems and Applications (COCOS) October 1999, Muenster, Germany, Oral presentation
100. "Excitability and Optical Excitable Waves in Semiconductor Lasers" Tredicce JR, S. Balle, P. Couillet, and M. Giudici, Photonics 2000 - San Jose, Ca. USA, January 2000, Invited Talk
101. "Combined Effect of semiconductor gain Dynamics and thermal shift in polarization selection in VCSELs" M. San Miguel, S. Balle, E. Tolkacheva, and Tredicce JR Photonics 2000 - San Jose, Ca. USA, January 2000, Invited Talk

102. "Spatial Structures in Vertical Cavity Semiconductor Amplifiers" T. Ackemann, S. Barland, M. Giudici, Tredicce JR, R. Jager, M. Grabherr, M. Miller, and K. J. Ebeling, NOEKS 2000, Marburg, Germany, April 2000, Oral presentation.
103. "Spatial Structures in broad area vertical cavity regenerative amplifiers" T. Ackemann, S. Barland, M. Giudici, Tredicce JR, M. Cara, S. Balle, R. Jager, M. Grabherr, M. Miller, and K. J. Ebeling, CLEO 2000, San Francisco, Ca. USA, May 2000, Oral presentation.
104. "Dynamics of coupled lasers : equivalence to Bose -Einstein condensates" P. Couillet, M. Giudici, M. Clerc, N. Vanderbergh, and Tredicce JR, Intn'l Quantum Electronics Conference, IQEC - Nice, France, September 2000, Invited Talk
105. "Coherence Resonance in Optical Systems" M. Giudici, G. Giacomelli, S. Balle, and Tredicce JR, Intn'l Quantum Electronics Conference, IQEC - Nice, France, September 2000, Oral Presentation
106. "Polarization Selection in VCSELs : Influence of Gain Dynamics, Spin Dynamics, and Thermal shift." J. Mulet, S. Balle, C. Mirasso, M. San Miguel, E. Tolkacheva, and Tredicce JR Conference on Lasers and Electrooptics, CLEO, Nice, France, September 2000, Oral presentation.
107. "Review on Cavity Solitons", Tredicce JR, Optical Soliton Workshop 2001, March 2001, Orlando, Florida, USA. Invited talk.
108. "Cavity Solitons in One-Dimensional Semiconductor Amplifiers: Experiment and Theory agree", S. Barland, M. Giudici, Tredicce JR, Lugiato LA, G. Tissoni, and M. Brambilla, Non Linear Guided Waves (NLGW) 2001, March 2001, Invited Talk.
109. "Structures spatiales localisees dans une cavite optique a semiconducteur", S. Barland, M. Giudici, S. Balle, Tredicce JR, Rencontres du Non Lineaire IHP, March 2001, Paris,, France. Oral presentation.
110. "Experiments on Cavity Solitons in Semiconductor Amplifiers" Tredicce JR, S. Balle, S. Barland, M. Giudici, Intn'l Conf. On Experimental Non Linear Dynamics, July 2001, Potsdam, Germany, Invited Talk.
111. "Localized structures work as pixels in semiconductor amplifiers" Tredicce JR, S. Barland, M. Giudici, S. Balle, X. Hachair, and L. Furfaro, Conference CKP, La Foux d'Allos, Juin 2002, France. Invited Talk.
112. "Cavity Solitons work as pixels in semiconductor" S. Barland, M. Giudici, Tredicce JR, S. Balle, M. Brambilla, T. Maggipinto, Lugiato LA, G. Tissoni, T. Knodl, M. Miller, R. Jager. IQEC 2002, Moscow, Russia, June 2002, Invited Talk.
113. "Cavity Solitons work as Pixels in Semiconductor Microresonators", S. Barland, M. Giudici, Tredicce JR, S. Balle, M. Brambilla, T. Maggipinto, Lugiato LA, G. Tissoni, NLGW2002, Stresa, Italy, September 2002, Oral presentation.
114. "Localized structures in semiconductor amplifiers", Tredicce JR, S. Barland, M. Giudici, X. Hachair, and L. Furfaro, MEDYFINOL 2002, Colonia, Uruguay, December 2002, Invited Talk.
115. "Cavity Solitons", Tredicce JR, S. Barland, M. Giudici, X. Hachair and L. Furfaro, Physics of Quantum Electronics, Snowbird, USA, January 2003, Invited Talk.
116. "Cavity Solitons in Semiconductors" M. Giudici, S. Barland, Tredicce JR, S. Balle, M. Brambilla, Lugiato LA, G. Tissoni, EQEC 2003, Munich, Germany, June 2003, Key note paper.

117. "Localised Structures in edge emitter semiconductor lasers". S. Balle, S. Barland, M. Brambilla, M. Giudici, Lugiato LA, T. Maggipinto, G. Tissoni, and Tredicce JR, EQEC 2003, Munich, Germany, June 2003, Oral Presentation.
118. "Dynamics of multimode semiconductor lasers". M. Giudici, A. Yacomotti, Tredicce JR, E. Viktorov, P. Mandel, EQEC 2003, Munich, Germany, June 2003, Oral presentation.
119. "Cavity Solitons as Pixels in Semiconductors", J.R. Tredicce, S. Barland, M. Giudici, S. Balle, M. Brambilla, T. Maggipinto, L.A. Lugiato, and G. Tissoni, FRISNO 7, Meeting French-Israeli, Les Houches (France), 2003. Invited Talk.
120. "Dynamics of Multimode Semiconductor Lasers", Tredicce JR, M. Giudici, L. Furfaro, X. Hachair, and S. Balle, Chaos, Synchronization and Nonlinear Dynamics in Optical Systems, Colonia, Uruguay, December 2003, Invited Talk.
121. "Cavity solitons in semiconductor microcavities and their properties". J. R. Tredicce, M. Giudici, X. Hachair, L. Furfaro, K. Elhadi, S. S. Barland, S. Balle, L. Spinelli, G. Tissoni, L.A. Lugiato, M. Brambilla, T. Maggipinto. French-Israeli Symposium on Nonlinear and Quantum Optics, Eil Borek, Israel, February 2005, Invited Talk
122. "Cavity Solitons positioning and drift in presence of a phase gradient." F. Pedaci, S. Barland, E. Caboche, P. Genevet, M. Giudici, J. R. Tredicce. French-Israeli Symposium on Nonlinear and Quantum Optics, Les Houches, France, February 2007.
123. "About Human Resources in Science" J. R. Tredicce, Closing Conference Of International Year of Physics-2005, Recife, December 2005 (invited Talk).
124. "Multi and single mode spatio temporal instabilities in a laser with injected signal", J.R. Tredicce, Second "Rio de la Plata" Workshop on Noise, Chaos and Complexity in Lasers and Nonlinear Optics. Colonia del Sacramento, Uruguay, December 2005 (Invited Talk).
125. "All Optical Delay Line" M. Giudici, S. Barland and J. R. Tredicce, Intl. Conf. on Semiconductor Materials and Optics, Kiev, Ukraine, October 2006 (Invited Talk).
126. " All Optical Delay Line Using Cavity Solitons in a Semiconductor Device", F. Pedaci, S. Barland, M. Giudici, E. Caboche, and J. R. Tredicce, XV Conference on Non Equilibrium Statistical Mechanics and Nonlinear Physics (MEDYFINOL), Mar del Plata, Argentina, December 2006 (Invited Talk).
127. "Spatio-Temporal Instabilities and Localized structures in Optical systems" J. R. Tredicce, in Coherence and Quantum Optics : Lorenzo M. Narducci Memorial Symposium, Drexel University, Philadelphia, May 2007 (Invited Talk).
128. "Using Gradients to Control Cavity Solitons" F. Pedaci, P. Genevet, E. Caboche, Stephane Barland, M. Giudici, and Jorge Tredicce PIERS 2007, Beijing, China, March 2007 (Invited Talk).
129. "Physics and Applications of Cavity Solitons" J. R. Tredicce, Intn'l Workshop on "Complex Optics in Mesostuctured Materials" (COMMa07), Erice , Italy, July 2007 (Invited Talk).
130. "'Cavity solitons in a non translational invariant world". S. Barland, M. Giudici, and J. R. Tredicce, International Conference on Coherent and Nonlinear Optics (ICONO-2007), Minsk, Bielarussia, May 2007.

131. "All Optical Delay Line Using Semiconductor Cavity Solitons" F. Pedaci, S. Barland, E. Caboche, P. Genevet, M. Giudici, J. R. Tredicce, T. Ackemann, A. J. Scroggie, W. J. Firth, G-L.Oppo, G. Tissoni, and R. Jaeger. Slow and Fast Light Topical Meeting, Salt lake City, Utah, USA, July 2007.
132. "All Optical Delay Line Based on Semiconductor Cavity Solitons" F. Pedaci, S. Barland, E. Caboche, P. Genevet, M. Giudici, J. R. Tredicce, T. Ackemann, A. J. Scroggie, W. J. Firth, G-L.Oppo, G. Tissoni, and R. Jaeger, OSA Topical Meeting on Nonlinear Photonics, Quebec, Canada, September 2007.
133. "Slow light and all-optical delay lines using cavity solitons in semiconductor lasers" F. Pedaci, S. Barland, E. Caboche, P. Genevet, M. Giudici, J. R. Tredicce, T. Ackemann, A. J. Scroggie, W. J. Firth, G-L.Oppo, G. Tissoni, and R. Jaeger, CLEO Europe/IQEC 2007, Munich, June 2007.
134. "Controlling position and motion of cavity solitons". S. Barland, P. Genevet, F. Pedaci, M. Giudici, J. R. Tredicce, CLEO Europe/IQEC 2007, Munich, June 2007.
135. "Interplay of external gradients and material defects in the dynamics of semiconductor cavity solitons", G. Tissoni, L.A. Lugiato, S. Barland, M. Giudici, F. Pedaci, J. R. Tredicce, CLEO Europe/IQEC 2007, Munich, June 2007.
136. "Mapping local defects of extended media using cavity solitons", F. Pedaci, S. Barland, M. Giudici, P. Genevet, E. Caboche and J. R. Tredicce Third "Rio de la Plata" Workshop on Noise, Chaos and Complexity in Lasers and Nonlinear Optics. Punta del Este, Uruguay, December 2007 (Invited Talk).
137. "Cavity solitons all-optical delay line: an alternative to slow light" S. Barland, M. Giudici, E. Caboche, F. Pedaci, and J. R. Tredicce SPIE Photonics West, Topical Meeting on Advances in Slow and Fast Light, San Jose California, January 2008. (Invited Paper)
138. "Cavity Soliton Motion in semiconductor lasers" Giudici M, S. Barland, F. Pedaci, J. Tredicce. IPSSO 2007, International Workshop on Instability, Patterns and Spatial Solitons, 28-30 March 2007, Metz (France).
139. "Stochastic Effects in Bulk Semiconductor Lasers" Giudici M., Pedaci F, Barland S, Giacomelli G, Tredicce J., Phase 2007, International Workshop on Physics and Application of Semiconductor Lasers, 28-30 March 2007, Metz (France).
140. "Cavity solitons in semiconductor microcavities: applications and perspectives on the future" F. Pedaci, P. Genevet, E. Caboche, G. Tissoni, S. Barland, M. Giudici, L. Lugiato, J.R. Tredicce in Dissipative Solitons Workshop (ACOLS/ACOLF), Adelaide, Australia, 30/11-3/12 2009. (Invited talk)
141. "Cavity Soliton Laser" S. Barland, E. Caboche, P. Genevet, M. Giudici, L. Gil, L. Columbo, J. R. Tredicce, J. Martinez Avila, J. Rios Leite MEDYFINOL'08 XVI Conference on Nonequilibrium Statistical Mechanics & Nonlinear Physics, Punta del Este, Uruguay, 1 – 5 December, 2008 (Invited Talk)
142. "Effects of Phase and Intensity Gradients on Localized Structures" L. Columbo, L. Gil, J. R. Tredicce SIAM Conference on Nonlinear Waves and Coherent Structures (NW08) Rome, Italy. July 21-24, 2008 (Invited Talk)
143. "Physics and properties of Cavity Soliton Lasers" S. Barland, E. Caboche, L. Columbo, P. Genevet, L. Gil, M. Giudici, J. R. Tredicce, Optical Society of America, Topical Meeting on Nonlinear Optics, Honolulu, Hawaii, USA July 12-17 2009 (Invited Talk)
144. "Cavity Soliton Lasers" S. Barland, E. Caboche, L. Columbo, P. Genevet, L. Gil, M. Giudici, J.R. Tredicce Fourth Rio de la Plata Workshop on Laser Dynamics and Nonlinear Photonics, Piriapolis, Uruguay December 8-11, 2009 (Invited Talk)

145. "From Vortices to Localized Structures in Optics" S. Barland, P. Genevet, M. Giudici, J. R. Tredicce  
Instabilities and Non equilibrium Structures XII, Viña del Mar Chile, December, 2009 (Invited Talk)
146. "Cavity Solitons and Localized Structures in Bidirectional Ring Lasers" L. Columbo, L. Gil, M. Giudici, J. R. Tredicce in Nonlinear Waves Theory and Applications, Beijing, China June 25-29, 2010 (Invited Talk)
147. "From vortices to localized structures in optical systems" J. R. Tredicce 2<sup>nd</sup> International Workshop on Nonlinear Optics and Novel Phenomena, Teda, Tianjing, China June 30-July 1, 2010 (Invited Talk)
148. "Using Localized Structures in Optics for Information Processing" S. Barland, M. Giudici, J.R. Tredicce  
Quantum Information Science – 19<sup>th</sup> International Laser Workshop (LPHYS'10) Foz do Iguazu, Brazil, July 5-9 2010 (Invited Talk)
149. "From vortices to localized structures in optical systems", S. Barland, E. Caboche, P. Genevet, M. Giudici, X. Hachair, F. Pedaci, G. Tissoni, J.R. Tredicce, Dynamics Days South America, Sao Jose Dos campos, Brazil July 26-30 2010 (Plenaqry Talk).

Grants support

Sponsor: EC - Esprit division  
Role: Principal Investigator  
Title: FunFaCS  
Total Project Period: 2005-2008  
Total Costs: 1,250,000 Euros

Sponsor: EEC - Esprit division  
Role: Principal Investigator  
Title: PIANOS  
Total Project Period: 1999-2003  
Total Costs: 250,000 Ecu

Sponsor: EEC - Esprit division  
Role: Principal Investigator  
Title: PASS  
Total Project Period: 1996-1999  
Total Costs: 225,000 Ecu

Sponsor: EEC - Esprit division  
Role: Principal Investigator  
Title: TONIC  
Total Project Period: 1992-1995  
Total Costs: 100.000 ecu

Sponsor: DRET  
Role: Principal Investigator  
Title: Formation of Spatio-temporal Structures in Laser Systems  
Total Project Period: 1992-1994  
Total Costs: 1.000.000 FF

Sponsor: Region PACA

Role: Principal Investigator  
Title: Teaching project on Lasers  
Total Project Period: January 1992  
Total Costs: 270.000 FF

Sponsor: Region PACA  
Role: Principal Investigator  
Title: Spatial Structures in Lasers  
Total Project Period: October 1991  
Total Costs: 320.000 FF

Sponsor: NADC, Warminster  
Role: Co-Investigator (PI: L. M. Narducci)  
Title: Solid State Laser Doppler Velocimeter  
Total Project Period: July 1990  
Total Costs: \$24,900

Sponsor: NADC, Warminster  
Role: Co-Investigator (PI: L. M. Narducci)  
Title: Theoretical Investigation of Raman anti-Stokes Scattering  
Total Project Period: Jan.1988  
Total Costs: \$99,000

Sponsor: NADC, Warminster  
Role: Co-Investigator (PI: L. M. Narducci)  
Title: An Investigation of Stimulated Raman Processes: the Role of the Transverse Beam Structure  
Total Project Period: June 1987  
Total Costs: \$24,900

Sponsor: NADC, Warminster  
Role: Co-Investigator (PI: L. M. Narducci)  
Title: Theoretical Investigation of the Nonlinear Interaction of Light with Xenon Atoms  
Total Project Period: June 1987  
Total Costs: \$24,900

Sponsor: Joseph A. DeFrees grant of Research Corporation  
Role: Principal Investigator  
Title: Theoretical and Experimental Studies of Transverse Effects in Lasers  
Total Project Period: September 1986  
Total Costs: \$17,000

Sponsor: NATO  
Role: Collaboration project with Bryn Mawr College, Strathclyde University and Universiti de Nice  
Title: Defects and Turbulence in Optical Systems  
Total Costs: \$10,000 for travel