

Cherubini Christian

Position: University Researcher (Fis/02) in Theoretical Physics.
Integrated Center for Research
Biomedical Engineering faculty,
University "Campus Bio-medico",
Via A. del Portillo 21, I-001285 Rome, Italy.

Period covered: November 1st 2007-today

Curriculum vitae

Born: July 24, 1973 in Rome, Italy.

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Languages: Italian, English.



EDUCATION

[2004-2007]

Postdoctoral Fellowship at the Biomedical Engineering Faculty of the University "Campus Bio-Medico" of Rome.

[2000-2003]

"International PhD in Gravitational Physics and Astrophysics" established by the Universities of Salerno (Italy), Portsmouth (UK), Zurich (Switzerland), Berlin and Potsdam, (Germany) and recognized by the Universities of Salerno (Italy) and Portsmouth (UK). Supervisors: Dr. Marco Bruni (UK), Prof. S. Capozziello (IT). Thesis Title: "Curvature Perturbation Theory and Teukolsky Master Equations in General Relativity." [British Library system number: 012905345]

[1992-2000]

University "La Sapienza" in Rome: Diploma di Laurea in Physics with full marks (110/110); supervisors: Prof. Remo Ruffini, Dr. Donato Bini. Thesis Title: Black hole physics reanalyzed and developed with symbolic manipulation methods: new perspectives in field theory around black holes.

I. Scientific Work

- Astrophysics of self-gravitating fluids.
- General relativistic perturbation theory for black holes and cosmology.
- Cosmology.
- Numerical Relativity.
- Analogue black holes and effective curved geometries in hydrodynamics
- Theoretical biophysics focused on pathological physiology of cardiac, neural and pancreatic tissues and on cancer growth modelling.

II. Conferences and educational activities

Conferences and Other External Scientific Work

2010 - 4th International Symposium on Modelling of Physiological Flows, Chia Laguna, Sardinia (ITALY)

- 2nd Galileo - Xu Guangqi Meeting, Ventimiglia (ITALY) and Nice (FRANCE)

- 5th International Workshop on Cardiac Mechano-Electric Feedback and Arrhythmias, Oxford (GREAT BRITAIN)

Teaching Duties

2009/10 Lecturer "Physics" (Alimentation and Human Nutrition Sciences, Medicine Faculty, University Campus Bio-Medico) and "Modern Physics" (Engineering Faculty, University, Campus Bio-Medico) ;

Work With Postdocs

The main collaboration of Dr Cherubini with ICRANET postdocs has been with Dr Andrea Geralico, in relation with perturbation theory in effective geometries occurring in uniformly rotating self gravitating classical fluids.

III. Service activities

Within ICRANet

Organization of conference activities in the ICRA center of Pescara (3rd ICRA Network workshop and Sixth Italo-Korean Meeting 1999) as well as in the organization of the 9th Marcel Grossmann in Rome (2000).

Other

Dr Cherubini has a longstanding collaboration with other ICRANET scientists. In particular in collaboration with Dr Donato Bini, Prof. Robert T Jantzen and Prof. Remo Ruffini he has written plenty articles in various areas of General Relativity. In collaboration with Dr Giovanni Montani he has studied problems of cosmology while with Prof. Simonetta Filippi he is involved in research activities in the fields of Numerical Relativity, effective Geometries in classical fluids, Stellar and Galactic Structures and Complex Systems in Nature.

2010 List of Publications

Articles Published on Refereed Journals:

Pumir A., Sinha S., Sridhar S., Argentina M., Horning M., Filippi S., Cherubini C., Luther S. and Krinsky V. "Wave-train-induced termination of weakly anchored vortices in excitable media". *Phys Rev E*, 81; 010901 (2010).

Gizzi A, Cherubini C., Migliori S., Alloni R., Portuesi R. and FILIPPI S. "On the electrical intestine turbulence induced by temperature changes". *Phys. Biol.*, 7; 16011-1(2010).

Cherubini C. and Filippi S. "Boundary Conditions for Scattering Problems from Acoustic Black Holes". *Journal of Korean Physical Society*, 56; 1668 (2010)

Bini D, Cherubini C., Filippi S, Gizzi A and Ricci P E, "On spiral waves arising in natural systems". *Comm. Comput. Phys.*, 8; 610 (2010).

D. Bini, C. Cherubini, S. Filippi, and A. Geralico "Effective geometry of the $n=1$ uniformly rotating self-gravitating polytrope" , *Phys. Rev. D*, 82; 044005 (2010).

Chapters on Volumes:

Cherubini C., Filippi S, Nardinocchi P and Teresi L. ""Electromechanical Modelling of Cardiac Tissue". in: Kamkin A. and Kiseleva (Editors). *Mechanosensitivity of the Heart*. vol. 3, p. 421-449, BERLIN: Springer, (2010)