

Simonetta Filippi



Position: **Full Professor** in Mathematical Physics (MAT/07).

Head, Laboratory of Non Linear Physics and Mathematical Modeling

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Membership: American Physical Society

I Scientific Work

- **Astrophysics of self-gravitating fluids.**
- **Cosmology.**
- **Numerical Relativity.**
- **Fluid Dynamics**
- **Theoretical Biophysics.**

II Conferences and educational activities

II a Conferences and Other External Scientific Work

-ECCOMAS Congress , VII European Congress on Computational Methods in Applied Sciences and Engineering, Crete, Greece, June 5-10 2016.

-2016 Conference on Complex Systems, Beurs Van Berlage, Amsterdam, The Netherlands, 19-22 September 2016.

II b Work With Students

Prof Filippi, together with Prof. C. Cherubini is working with the ICRANet PhD students Rahim Moradi and Wang Yu on problems of black hole plasma magnetohydrodynamics around rotating black holes. Moreover they are both working with Dr Federico Cipolletta, a former IRAP PhD student, on numerical methods for rotating and self-gravitating classical fluid equilibrium configurations with multi-parametric rotation laws.

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities

III a. Within ICRANet

Prof. Filippi serves as supervisor for IRAP PhD students.

III b. Outside ICRANet

- Lecturer “Dynamics of Complex Systems” (Engineering Department, University Campus Bio-Medico of Rome).
- Lecturer “Mathematical Physics Models for Engineering” (Engineering Faculty, University Campus Bio-Medico of Rome).
- Faculty of the BIOENGINEERING AND BIOSCIENCES PH.D." by University Campus Bio-Medico" of Rome.
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IV. Other

Prof. Filippi has a longstanding collaboration with ICRANET scientists. In particular in collaboration with Prof. Remo Ruffini she has written plenty articles on various aspects of Gravitational Physics. With Prof. Christian Cherubini, Dr Jorge Rueda, Dr Andrea Geralico and Dr Donato Bini she has been involved in research activities in the fields of Stellar and Galactic Structures, Effective Geometries and Complex Systems in Nature.

2016 List of Publications

- Nestola, M.G.C., Faggiano, E., Vergara, C., Lancellotti, R.M., Ippolito, S., Antona, C., Filippi, S., Quarteroni, A., Scrofani, R. , ”Computational comparison of aortic root stresses in presence of stentless and stented aortic valve bio-prostheses”, (2016) Computer Methods in Biomechanics and Biomedical Engineering, in press.
- Cherubini C. and Filippi S., Commun. Comput. Phys. 19, (2016), 758-769.
- Nestola, M.G.C., Gizzi, A., Cherubini, C., Filippi, S., International Journal of Modern Physics C 27 (2) (2016), 1650017.