

Relazione finale Assegno di Ricerca

1. Progetto di ricerca con Claudio Bonanno e Alessio Del Vigna

Stiamo preparando adesso un articolo sulle proprietà ergodiche di un sistema dinamico con misura infinita bidimensionale, collegato alla teoria delle frazioni continue multidimensionali.

2. Altri progetti di ricerca

Con Stefano Isola, abbiamo iniziato un'investigazione su il rapporto fra la teoria di musica, in particolare le scale musicali, e teoria di numeri (multidimensional continued fraction algorithms).

Con Andrei Ghenciu, stiamo scrivendo adesso un articolo con il titolo: *The Hausdorff dimension spectrum of Renyi-like continued fraction expansions*.

3. Articoli pubblicati

1. *Pointwise convergence of Birkhoff averages for global observables* (with Marco Lenci), *Chaos* **28**, August 2018. <https://doi.org/10.1063/1.5036652>

2. *Pointwise perturbations of countable Markov maps* (with T. Jordan and T. Sahlsten), *Nonlinearity* **31** no.4, 1351- 1377, April 2018. <https://doi.org/10.1088/1361-6544/aa9d5b>

4. Seminari su invito e a conferenze

“Pointwise convergence of Birkhoff averages for global observables”, AG Ergodentheorie Seminar, University of Vienna, Vienna, Austria – Settembre 2018
https://mat.univie.ac.at/%7Ezweimueller/AG_ETHY.html

“Continued fractions and well-formed scales”, EWM general meeting, Graz, Austria – Settembre 2018.
<https://sites.google.com/site/ewmgm18/mini-symposia/mathematics-and-music-1>

“Pointwise convergence of Birkhoff averages for global observables”, Ergodic Theory and Fractals, University of Delft, The Netherlands – Giugno 2018.
<http://www.math.leidenuniv.nl/~kalleccj/etfdays.html>


Dott.ssa Sara Munday

Visto e approvato.



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TERZA RELAZIONE SEMESTRALE
ASSEGNO DI RICERCA
"ESPERIMENTI DI RADIOSCIENZA SU
MISSIONI INTERPLANETARIE"

Vincenzo Di Pierri

February 28, 2018

1 Torsion theories

I continued the study of torsion theories, performing few more simulations. I presented the work done in the previous months at the 15th Marcel Grossmann Meeting in Rome. The paper is still work in progress.

2 Superior Conjunction Experiment

In the last six months we finished the work on Superior Conjunction Experiment. We published a paper [1] on Physical Review D, concerning with all the work done in the previous months. In this paper we have reported the results obtained in our simulations, in particular the results of the estimation of the Post Newtonian parameter γ in several cases: the single arc (for every Superior Conjunction), the multiarc, a study on the duration of the arc (in terms of days of observability) and finally a study on the systematic error in the range data.

References

- [1] Serra D., Di Pierri V., Schettino G., Tommei G. *Test of general relativity during the BepiColombo interplanetary cruise to Mercury*, Phys. Rev. D 98 064059, (2018)

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