

ON THE TOPOLOGY OF CLASSICAL AND DYNAMICAL MARKOV AND LAGRANGE SPECTRA

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The classical Lagrange and Markov spectra are closed subsets of the real line consisting of the best constants of Diophantine approximations of certain irrational numbers and indefinite binary quadratic forms. The Lagrange and Markov dynamical spectra, was introduced by Moreira and share several geometric and topological aspects with the classical ones.

In this talk, we will present recent results on the topological structure of both spectra in the classical and dynamical forms. In particular, we will give some evidence that the set $M \setminus L$ is not closed, see [1]. This is a joint work with **C. Matheus, C. G. Moreira and S. Vieira**.

Finally, we will present Phase Transition theorems for the Markov and Lagrange dynamical spectra which allows us to conjecture a strong statement for the classical spectra, see [2]. This was obtained in a collaboration with **C. G. Moreira**.

REFERENCES

- [1] D. Lima, C. Matheus, C. G. Moreira and S. Vieira, $M \setminus L$ near 3, <https://arxiv.org/pdf/1904.00269.pdf>
- [2] D. Lima and C. G. Moreira, Phase Transitions on the Markov and Lagrange dynamical spectra, <https://arxiv.org/pdf/1801.04636.pdf>