



ID de Contribution: 2

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## Coarse topology, oscillations and persistence

*lundi 12 juin 2023 11:00 (1 heure)*

Studying topology of the zero set of a polynomial map is a classical topic in algebraic geometry. One may attempt to extend this study to less regular objects, such as linear combinations of Laplace-Beltrami eigenfunctions or entire maps in several complex variables. A phenomenon which ultimately breaks the analogy is the existence of highly oscillatory behaviour on small scales. We will explain how, using persistence modules and barcodes, it is possible to systematically discard small oscillations and prove coarse analogues of certain classical theorems, such as Bézout's theorem, in the above mentioned setups. The talk is based on joint works with L. Buhovsky, J. Payette, I. Polterovich, L. Polterovich and E. Shelukhin.

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