

Spectral minimal partitions on metric graphs, and applications

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There exist several possibilities of partitioning graphs or manifolds, including those based on Cheeger cuts or nodal domains. We present a different approach that elaborates on a theory developed in the last 15 years, among others, by Bonnaillie-Noël, Helffer, Hoffmann-Ostenhof, and Terracini. While these authors focus on domains, we are going to discuss the partitioning of metric graphs in terms of spectral quantities of the associated Laplacian.

We introduce a well-defined class of spectral partitions of metric graphs and show some of their features. While the complicated topology of metric graphs prevents us from recovering all results that hold for domains, new remarkable features also arise.

This is joint work with Matthias Hofmann, James Kennedy, Pavel Kurasov, Corentin Léna, Marvin Plümer.