

Bridging between higher-order mechanisms and higher-order phenomena

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In this mini-course we will link together two sides of the recent progresses in higher-order systems.

On the one hand, we will describe recent advances in dynamical systems with interactions among groups of nodes (higher-order interactions) and the novel phenomenologies that stem from them.

On the other one, we will see how recent tools from algebraic topology and multivariate information theory characterise these behaviours in real-world data.

Finally, we will describe the current attempts to infer or reconstruct the original underlying higher-order models from data.