

## Harmonic maps in high-dimensional spheres, representations and random matrices (1/4)

*mardi 15 juillet 2025 14:30 (1 heure)*

This course will be about harmonic maps from 2d surfaces to spheres of high dimensions, coming from unitary representations of surface groups. This topic falls under the common theme in geometric analysis of studying geometric objects from topological data and vice versa. We will discuss rigidity phenomena for the shape of such harmonic maps into spheres, focusing on both the high-dimensional asymptotic regime, where random matrix theory plays a role, and the infinite dimensional case, where representation theory of  $\mathrm{PSL}_2(\mathbb{R})$  is central.

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