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(1st lesson) Curtains, walls and stable cylinders

Monday, 22 September 2025 11:30 (1 hour)

In this talk we will discuss a generalization of Sageev's wallspace construction that allows to study the geometry of certain spaces by combinatorial properties of certain walls. Specifically, we'll look at the interactions with hyperbolicity and focus on two applications. In CAT(0) spaces, these techniques allow to construct a "universal hyperbolic quotient", called the curtain model, that is analogous to the curve graph of a surface. When focusing on a space that is already hyperbolic, the construction can be used to improve its fine properties, and in particular we address a conjecture of Rips and Sela and show that residually finite hyperbolic groups admit globally stable cylinders. This is joint work with Petyt and Zalloum.

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