ASYMPTOTIC CONES OF METRIC SPACES AND RELATED TOPICS

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[Joint research with Jean-François Lafont.]

The asymptotic cone of a metric space X can be defined as the limit of rescalings of X. Such limit does not exist in a classical setting, but makes sense using ultra-limits. The asymptotic cones encode a lot of properties of the metrics spaces and reveal a sctructure which is not evident using classical methods. For instace, a space is Gromov-hyperbolic if and only if its asymptotic cones are real-trees. In this talk we will illustrate some applications of asymptotic cones in Geometry, in particular in the study of hyperbolic objects and higher rank symmetric spaces.

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