

Stefan Wenger (Univ. Fribourg)

Isoperimetric characterization of non-positive curvature

The aim of this talk is to show that a locally compact geodesic metric space has non-positive curvature in the sense of Alexandrov (i.e. is a CAT(0)-space) if and only if it admits a quadratic isoperimetric inequality for curves with sharp Euclidean constant, that is, if every closed curve of length l bounds a disc of area at most $(4\pi)^{-1}l^2$.

The proof of this result is based on (1) a solution of the classical problem of Plateau in the general setting of proper metric spaces and (2) properties of the intrinsic structure of minimal discs in metric spaces. Based on joint work with A. Lytchak.