

# Local to global — geometry of symmetric spaces with indefinite-metric

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## Abstract

How local geometric structure affects the global nature of manifolds? The local to global study of geometries was a major trend of 20th century geometry, with remarkable developments achieved particularly in Riemannian geometry. In contrast, in areas such as Lorentz geometry, familiar to us as the space-time of relativity theory, and more generally in pseudo-Riemannian geometry of general signature, surprising little has been known about global properties of the geometry until recently even if we impose a locally homogeneous structure. I plan to survey this young topic in geometry such as the existence problem of compact locally homogeneous manifolds and their deformation theory.

This talk should be accessible to graduate students.