

GROMOV-HAUSDORFF AND INTRINSIC FLAT CONVERGENCE

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Gromov has called for a theory of singular spaces with positive scalar curvature. Here we present related open questions and results concerning sequences of Riemannian manifolds with uniform lower scalar curvature bounds.

- I. We define GH and IF convergence, describe their limit spaces and present the key compactness theorems.
- II. We present many examples of sequences of manifolds with positive scalar curvature and describe their limit spaces when they exist.
- III. We survey theorems concerning IF limits of manifolds and the properties that are conserved under IF convergence.
- IV. We survey theorems and open problems concerning IF limits of manifolds with nonnegative scalar curvature.

Duration: 4 hours.

Lecture notes: <https://drive.google.com/file/d/0B71BgAKnd2vgR0NZQ01RVWYzNEE/view>