

Advanced Topics in Geometry E1 (MTH.B505)

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2023/04/25

Correction: Our Goal (of MTH.B505–506)

Theorem

A complete simply connected Riemannian n -manifold ($n \geq 2$) of constant sectional curvature k is isometric to

- *the Euclidean space \mathbb{R}^n when $k = 0$,*
- *the n -dimensional sphere $S^n(k) \subset \mathbb{R}^{n+1}$ if $k > 0$, and*
- *the n -dimensional hyperbolic space $H^n(k)$ if $k < 0$.*

cf. The fundamental theorem for surface theory