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Rigidity of discrete subgroups of simple Lie groups of rank ≥ 2

(Higher rank rigidity among all compact Riemannian manifolds of non-positive curvature) Let X be a compact irreducible (no finite cover splits non-trivially) locally symmetric space of non-positive curvature and rank ≥ 2 . Let Y be a compact Riemannian manifold with non-positive curvature such that

$$\pi_1(X, x_0) \cong \pi_1(Y, y_0)$$

Then for some $\lambda > 0$ we have

$$(X, \lambda g_X) \cong_{\text{Riem}} (Y, g_Y)$$

Let M be a irreducible symmetric space of non-compact type and rank ≥ 2 . Let M/Γ be a compact locally symmetric space and X be a compact manifold of non-positive curvature with

$$\Gamma \cong \pi_1(X, x_0)$$

Then M/Γ and X are isometric upto a constant scaling.

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