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Section:

7. Lie Groups and Lie Algebras

1991 MS Classification: 22, 43, 53
Platonov, Sergei S. ,
Invariant subspaces of some function spaces on symmetric spaces
Let G be a connected, non–compact, semi–simple Lie group with finite centre, K a maximal compact subgroup of G, and $M = G/K$ a Riemannian symmetric space of noncompact type. Let $\mathcal{F}$ be a locally convex space of functions on M, and $\pi(g) : f(x) \mapsto F(g^{-1}x)$ the quasiregular representation of the group G on the space $\mathcal{F}$. A linear subspace $H \subset \mathcal{F}$ is called an *invariant subspace* if it is closed and π-invariant. We describe the construction of invariant subspaces of some function spaces in case when M is a Riemannian symmetric space of rank 1. The function spaces $\mathcal{F}$ considered include, in particular, the spaces $C^d(M)$ $(d = 0, 1, \ldots, \infty)$ and spaces of functions of exponential growth on M.
Reference: S. Platonov, Invariant subspaces of some function spaces on symmetric spaces. I. *Izv. Math.* **59** (1995), 1007–1050.