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Mixed Models for Reductive Dual Pairs and Siegel Domains for Hermitian Symmetric Spaces

Let (G, G') be the reductive dual pair $(Sp(n, \mathbb{R}), O(k))$ or $(U(p, q), U(k))$, and let K be a maximal compact subgroup of the noncompact group G . Then for the representations π of G which occur in the Howe duality correspondence for (G, G') , we construct explicit intertwining maps between mixed models of π and spaces of holomorphic sections of vector bundles over the hermitian symmetric space G/K , where G/K is embedded in its holomorphic tangent space as a type III Siegel domain. This result provides a link between the original construction of these representations using tube domain and type II Siegel domain realizations of G/K and more recent constructions using the bounded domain realization of G/K .