

Vector-valued Bergman spaces and intertwining operators

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It is well-known that Bergman spaces of holomorphic functions on hermitian symmetric domains, generalizing the unit disk, play an important role in harmonic analysis of (semi-simple) Lie groups G . We consider Hilbert spaces of holomorphic functions $f(z, \zeta)$, where z belongs to a symmetric domain D and ζ belongs to a “Grassmann type” compact dual space of D . In this setting the Lie group G does not act irreducibly but the C^* -algebra of Toeplitz operators is still irreducible. The explicit construction of intertwining operators (due to Korányi and Misra for the unit disk) leads to multi-variable hypergeometric functions.