# İSTANBUL ANALYSIS SEMINARS

## DILATION THEORY OF INVARIANT KERNELS VALUED IN CONTINUOUSLY ADJOINTABLE OPERATORS OF VH-SPACES

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**Abstract:** We consider positive semidefinite kernels that are invariant under an action of a ∗-semigroup and valued in the continuous and continuously adjointable operators of VH (Vector Hilbert)-spaces in the sense of Loynes. The main theorem gives two necessary and sufficient boundedness conditions for the existence of an invariant Kolmogorov decomposition of the kernel, or equivalently, ∗-representations of the ∗-semigroup on a reproducing kernel VH-space. We discuss several cases in which the latter boundedness condition follows automatically. This is a joint work with A. Gheondea.

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