YEDİTEPE UNIVERSITY

MATHEMATICS DEPARTMENT SEMINARS

Dilations of positive semidefinite kernels valued in operators of barrelled VH-spaces

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Abstract: A VH-space (Vector Hilbert Space in the sense of Loynes) is a complex complete locally convex space with a topologically ordered $*$-space valued inner product. Examples of VH-spaces include the chain of locally Hilbert C^*-modules, Hilbert C^*-modules and Hilbert Spaces.

In this talk, after a brief discussion of VH-Spaces with examples and basic properties, we state a general dilation theorem for positive semidefinite kernels valued in adjointable operators on a barrelled VH-space. We prove that, under barrelledness assumption, a necessary and sufficient condition for the existence of a natural VH-space dilation, or equivalently, a reproducing kernel VH-space representation of the kernel, is satisfied automatically.

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