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C^ -algebras of operators in non-archimedean Hilbert spaces*

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Abstract: We show several examples of n.a. valued fields with involution. Then, by means of a field of this kind, we introduce “n.a. Hilbert spaces” in which the norm comes from a certain hermitian sesquilinear form. We study these spaces and the algebra of bounded operators which are defined on them and have an adjoint. Essential differences with respect to the usual case are observed.

Keywords: non-archimedean Hilbert space, non-archimedean C^* -algebra

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