Polar Decompositions in Indefinite Inner Product Spaces

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joint work with B. Lins, P. Meade, A. Ran and L. Rodman

The talk gives an overview of the theory of polar decompositions in a space equipped with an indefinite inner product, i.e., decompositions of matrices into two factors that are unitary and selfadjoint with respect to this indefinite inner product. The talk discusses basic properties as well as recently obtained results. The main focus are finite dimensional spaces, but also generalizations to Pontryagin and Krein spaces are briefly discussed.