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RATIONAL INNER FUNCTIONS IN THE SCHUR-AGLER CLASS OF THE POLYDISK

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Abstract

Every two-variable rational inner function on the bidisk has a special representation called a unitary transfer function realization. It is well known and related to important ideas in operator theory that this does not extend to three or more variables on the polydisk. We study the class of rational inner functions on the polydisk which *do* possess a unitary realization (the Schur-Agler class) and investigate minimality in their representations. Schur-Agler class rational inner functions in three or more variables cannot be represented in a way that is *as* minimal as two variables might suggest.

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