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Factorization theory for stable, discrete-time inner functions. (English summary)

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Given a square inner-function U (i.e. U is analytic in $\{z; |z| > 1\}$, including at ∞ , and $U^*U = I$) with the minimal realisation

$$U = \begin{pmatrix} A & B_\mu \\ C & D_\mu \end{pmatrix},$$

the authors show that there exists a bijective correspondence between (1) left square inner factors of U ; (2) invariant subspaces of A ; (3) solutions Y , for suitable B and square D , of the system $Y = AY A^* + BB^*$, $BD^* + AYC^* = I$, $DD^* + CYC^* = I$.

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