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**Eigenvalue Condition Numbers of Polynomial Eigenvalue Problems under Möbius Transformations**

We study the effect of Möbius transformations on the sensitivity of polynomial eigenvalues problems (PEP). More precisely, we compare eigenvalue condition numbers for a PEP and the correspondent eigenvalue condition numbers for the same PEP modified with a Möbius transformation. We bound this relationship with factors that depends on the condition number of the matrix that induces the Möbius transformation and on the eigenvalue whose normwise condition number we consider, and establish sufficient conditions where Möbius transformations do not alter significantly the condition numbers.