

The change of the Weyr characteristic of a matrix pencil after rank-one perturbation

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Abstract

The research on rank perturbations of matrix pencils has been a very active area in the last decades. See, for instance, [3]-[7] and the references therein.

A solution to the problem of characterizing the Kronecker structure of a matrix pencil obtained by a rank-one perturbation of another matrix pencil was known ([3, 5]). Inspired in [7], we introduce the generalized Weyr characteristic of a matrix pencil. With an appropriate restatement of the result in [3, 5], we are able to find bounds for the change of the generalized Weyr characteristic of a matrix pencil perturbed by another pencil of rank one.

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