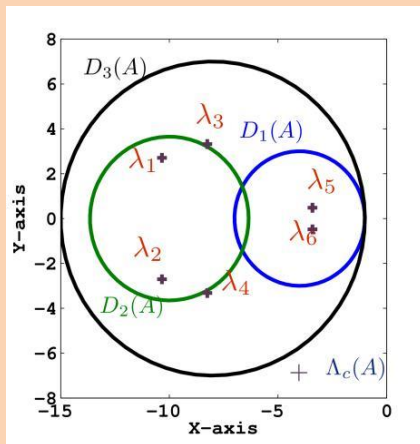# Discipline of Mathematics

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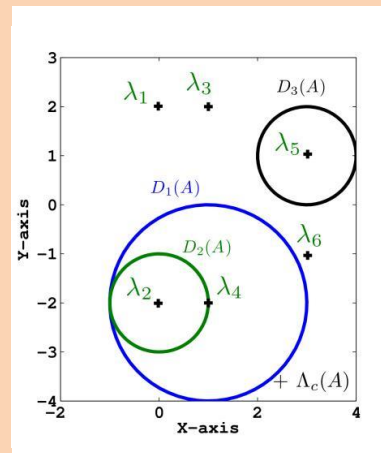
## DR. SK. SAFIQUE AHMAD
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**Title**

**Bounds for Eigenvalues of Matrix Polynomials over Quaternion Division Algebra**

## Abstract

Localization theorems are discussed for the left and right eigenvalues of block quaternionic matrices. Basic definitions of the left and right eigenvalues of quaternionic matrices are extended to quaternionic matrix polynomials. Furthermore, bounds on the absolute values of the left and right eigenvalues of quaternionic matrix polynomials are devised and illustrated for the matrix $p$ norm, where $p=1,2,\infty,F$. The above generalizes the bounds on the absolute values of the eigenvalues of complex matrix polynomials, which give sharper bounds to the bounds developed in [LAA, 358, pp. 5–22 2003] for the case of 1, 2, and $\infty$ matrix norms. http://link.springer.com/article/10.1007/s00006-016-0640-7