HONOURS SEMINAR

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Crouzeix's Conjecture

Supervised by Dr. Remus Floricel

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Abstract

In 2004, M. Crouzeix conjectured a bound for the norm of an analytic function of matrices in terms of the maximum of the modulus of the function over the numerical range of the matrix in the complex plane. More precisely, the conjecture states that the numerical range of a matrix is a 2-spectral set. Since then, the conjecture has been proved for numerous classes of matrices and, in this seminar, some of the known results in this regard are presented, with a focus on certain class of 3×3 tridiagonal matrices.

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