

## Location for the eigenvalues of quaternionic matrices and its applications

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**Abstract.** In this talk, we present location of left and right eigenvalues of a quaternionic matrix. After that, a sufficient condition for the stability of a quaternionic matrix is derived that generalizes the stability condition for a complex matrix. Finally, a characterization of bounds for the zeros of quaternionic polynomials is given.

**Keywords:** Quaternionic matrix; left and right eigenvalues; Gerschgorin type theorems; quaternionic polynomials.

**Short Bio.:** My self Dr. Istkhar Ali. I were born in Sonauli, India. I did my B.Sc. from St. Andrew's College and received my M.Sc. in Mathematics from DDU Gorakhpur University, India. I obatined my Ph.D. degree in Mathematics from Indian Institute of Technology Indore(IIT Indore), India in 2017. My thesis title was "Localization Theorems and Perturbation Analysis on Quaternionic Eigenvalue Problems". After my thesis submission I joined ITM, Gorakhpur as an Assistant Professor in August, 2017. Fourteen months after teaching at ITM, Gorakhpur, I received Postdoctoral Fellowship funded by by the National Science Foundation, Croatia. So, I visited at JJS University of Osijek, Croatia, as a Postdoctoral Fellow in December, 2018.