

# COLLOQUIUM

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~ **The Octonionic Eigenvalue Problem**

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**Time: 3:30 PM**

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Title:

The Octonionic Eigenvalue Problem

Abstract:

The eigenvalues of complex Hermitian matrices are real, but what if the matrix is octonionic? Several eigenvalue problems for Hermitian matrices over both the quaternions and octonions will be discussed, showing that most of the properties expected by analogy with the complex case can be recovered if suitably interpreted. There are nevertheless some interesting surprises along the way, related both to the properties of the octonionic projective plane, and to the existence of non-real eigenvalues in some cases.