

## On the “hard case” of the quadratically constrained quadratic programs with one constraint

Le Thanh Hieu<sup>1</sup>,

In this talk, we will discuss the “hard case” of the quadratically constrained quadratic program (QCQP) with one constraint: The interior of the spectrahedron spanned by the two matrices of the quadratically objective and constraint functions does not contain any nonnegative number. After recalling some important properties of the simultaneous diagonalization via congruence of two matrices, their spectrahedron is completely described and applied to solve our QCQP problem.

**Keywords:** simultaneous diagonalization via congruence (SDC), quadratically constrained quadratic program (QCQP)

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<sup>1</sup>Department of Mathematics and Statistics, Quy Nhon University  
lethanhhie@qnu.edu.vn