On the Quadratic Eigenvalue Complementarity Problem

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A new sufficient condition for the existence of solutions to the Quadratic Eigenvalue Complementarity Problem (QEiCP) is established. This condition exploits the reduction of the QEiCP to a normal EiCP. An upper bound for the number of solutions of the QEiCP is presented. A new strategy for the QEiCP is analyzed which solves the resulting EiCP by an equivalent Variational Inequality Problem. Numerical experiments with a projection VI method illustrate the interest of this methodology in practice.