

COLÓQUIO DE MATEMÁTICA

Quarta-feira, 23 de maio de 2018 às 14h30

Matrix and Matrix Pencil Completion Problems

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Abstract: Matrix completion problems are fundamental problems in linear algebra. Apart from purely theoretical interest, matrix and matrix pencils completion problems are directly related to system theory, in particular, linear control theory, including pole placement, non-regular feedback, dynamic feedback, zero placement and early-stage design, and have many other applications in engineering like e.g. in computer vision. Matrix completion problems come in a wide variety due to the various possibilities of the prescribed matrix entries and the invariants in question. In this talk, I will emphasize the completion problems where the prescribed set of entries forms a subpencil, and where the goal is to describe the possible set of all Kronecker invariants. Recently, new combinatorial techniques have been introduced that allow new attacks towards the solution of this classical, open General Matrix Pencil Completion Problem. I will present some of these techniques and give an overview of the state-of-the-art.

Convívio antes do Colóquio na Sala de Docentes do DM, com café,
chá e bolos (14h até 14h30)