Mixed Integer Second Order Cone Optimization (MISOCO): Conic Cuts, Warm Start, and Rounding

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Abstract: MISOCO has numerous applications in engineering sciences, finance, and health-care, thus MISOCO has gained considerable interest in recent years. Efficient Interior Point Methods and software are available to solve continuous SOCO problems. The theory of Disjunctive Conic Cuts (DCCs) for MISOCO is well developed, and several recent papers prove the power of DCCs in solving in solving MISOCO problems. Recent developments, as the main focus of this presentation, include the identification of pathological disjunctions, the identification of the optimal partition, new efficient warm start strategies, and a novel rounding heuristic.

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