

Talk: Recent advances towards global optimality for Optimal Power Flow

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Abstract: Alternative Current Optimal Power Flow (ACOPF) is known as a non-convex polynomial problem. Solving ACOPF to global optimality remains a challenge when classic convex relaxations are not exact. After an introduction to OPF and review of recent advances towards global optimality, we will present our own work. We use Semi-Definite Programming to reformulate ACOPF into a quadratic relaxation and get some convexity properties. To solve the gap between Interior Point (feasible, good) solution and quadratic convex relaxation, we are using a branch-and-bound algorithm. Thanks to optimal quadratic reformulation, the initial lower bound (at root node) is very good since it is the same as the SDP relaxation which is known to be tight.