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Multiobjective optimization for engineering design

Engineering design problems usually require the satisfaction of several objectives. In most cases there exists conflict among design requirements and, thus, the solution to the problem is not either unique or trivial. In fact finding a tradeoff solution for these multiobjective optimization problems (MOP) is a crucial and time consuming task that the designer must carry out. Obtaining a design alternative as closer as possible to the designer preferences, requires the fulfillment of three essential steps: MOP statement, optimization process and decision making. In this talk, the general framework will be stated and several tools to assist designers in each step will be presented. In addition, application examples in engineering design, model identification and controller tuning will complement the explanation.

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