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Talk announcement

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Tuesday, Feb 13, 2024
15:30, S2 416-1

On the implicit programming approach to MPECs via the SC generalized derivatives

Mathematical programs with equilibrium constraints (MPECs) belong to important applications of generalized differential calculus.Very often the control-state mapping is given as the solution mapping of a generalized equation and happens to be single-valued and Lipschitzian. In such cases, to compute a solution of the associated MPEC numerically, one may use the implicit programming approach (ImP) which is called sometimes also the reduction approach. For the computation of subgradients of the reduced objective one typically uses the generalized Jacobians or (more appropriately) the limiting coderivatives of the control-state mappings. It turns out,however, that the recently developed theory of SCD (subspace containing derivatives) and the associated SC generalized derivatives enables us to simplify and generalize this procedure in case of a broad class of equilibrium constraints.In this contribution it will be explained how one proceeds in case of various types of equilibria and what happens if the underlying coderivative chain rule holds as a strict inclusion. The results are illustrated by examples.