数学与系统科学研究院

计算数学所博士后定期学术报告

报告人：Dr. Muhammad Munir Butt

（ LSEC，ICMSEC ）

报告题目：

Formulation and Multigrid Solution of Cauchy-Riemann Optimal Control Problems

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下午 15:00-16:00

报告地点： 数学院南楼二层

202 会议室

Abstract：

The formulation and a full-multigrid solution of control-constrained Cauchy-Riemann optimal control problems shall be presented. A constrained distributed control mechanism through divergence and curl sources is considered with mixed boundary conditions. The corresponding optimal solutions are obtained solving a Cauch-Riemann optimality system consisting of four first-order partial differential equations and two inequality constraints. For the solution of the optimality system, staggered grids and a full-multigrid scheme are considered. The proposed full-multigrid method is based on a coarsening strategy by a factor of three that results in a nested hierarchy of staggered grids. The smoothing procedure consists of a distributed Gauss–Seidel scheme for the state and adjoint equations and a projected gradient step for the controls. Numerical results validate the effectiveness of the proposed approach.

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