

NUMERICAL ANALYSIS AND SCIENTIFIC COMPUTING
SEMINAR

*Model order reduction for parametrized optimal control
problems: from time-dependency to nonlinearity.*

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Abstract: Parametrized optimal control problems can represent an asset to fill the gap between collected data and partial differential equations in many scientific and industrial applications. Despite their indisputable usefulness, their computational complexity still limits their applicability in many-query and real-time parametric settings, most of all when the problem is time-dependent or nonlinear.

We propose reduced order methods as a valid strategy to deal with this issue. The talk focuses on the approaches that provide a low-dimensional framework to accelerate the simulations of the system, maintaining a fair degree of accuracy.

The first part of the talk is about the numerical algorithms used to reach this goal. The second part is more related to the applied viewpoint, analyzing the potential of reduced optimal control in many fields, such as bifurcating phenomena and numerical stabilization.

Monday, October 17, 2022, 10:00 am
Atwood 360

MATHEMATICS
EMORY UNIVERSITY