



CSC Seminar

SPEAKER

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TITLE

Autoencoders and Pod for Very Low Dimensional Nonlinear Controller Models

ABSTRACT

The control of nonlinear large-dimensional systems is a challenging task. Linearization based approaches can cope well with the computational bottlenecks but, by design, are limited to regimes where the nonlinearities do not dominate. The idea of considering state dependent coefficients, i.e. factorizing nonlinear terms as, where x is the system's state and where A is a matrix valued function of the state, seems capable to address control tasks in a nonlinear fashion while keeping a linear structure that is important for exploiting the many relevant tools from linear theory and numerical linear algebra. Still, the resulting formulation can be too complex for large-scale systems. Therefore, we propose an approximation by an affine-linear parametrization

with an encoding.

Tuesday, February 21, 2023 at 2 pm
seminar room Prigogine