Einladung zum Oberseminar Wissenschaftliches Rechnen

Julius-Maximilians-Universität Würzburg
Lehrstuhl für Wissenschaftliches Rechnen IX

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Modelling and control through a leadership of a refined flocking system

A refined flocking model that includes self-propelling, friction, attraction and repulsion, and alignment features is presented. This model takes into account various behavioral phenomena observed in biological and social systems. In addition, the presence of a leader is included in the system in order to develop a control strategy for the flocking model to accomplish desired objectives. Specifically, a model predictive control scheme is proposed that requires the solution of a sequence of open-loop optimality systems. An accurate Runge-Kutta scheme to discretize the flocking optimal control optimality systems and a nonlinear conjugate gradient scheme are implemented and discussed. Results of numerical experiments demonstrate the validity of the refined flocking model and the ability of the control strategy to drive the flocking system to attain a desired target configuration and to follow a given trajectory

Ort: Raum 30.03.007 (3. Stock) (Mathegeb. 30 West)   Zeit: Montag, 07.07.2014, 14.00 Uhr

Zu diesem Vortrag laden wir Sie herzlich ein.

gez. Prof. Dr. Alfio Borzi