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Section:

17. Control Theory and Optimization

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Kugelmann, Bernd, Universität Greifswald, Deutschland
Robust and Optimal Feedback-Control in Flight Dynamics
The paper describes a new method to solve optimal control problems in realtime. The idea of the method is to collect additional information about the nominal solution in advance by means of a sensitivity analysis and to use this information for updating the optimal control in minimal time during the process. The drawback of the idea is, that perturbations based on a systematic unpredicted influence to the underlying dynamics, like strong winds to the motion of an aircraft, cannot be handled easily. Therefore the presented method not only updates the control but also updates the comparison solution i. e. the nominal solution. The additional requirement of online computation is compensated by using a parallel algorithm.