

Abstract form

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Subject: Optimal Pilot Decisions and Flight Trajectories in Air Combat
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Abstract: (Max 100 words)

Analyses of air combat tactics and technologies as well as pilot training are time-consuming, expensive, and risky tasks. Hence, different operations research models have been developed and utilized for analyzing air combat and for supporting pilot training. Such models can be classified roughly into two major branches: optimization models providing optimal flight trajectories and simulation models applying synthesis approaches of pilot decisions. Both types of models are being studied in Systems Analysis Laboratory in Helsinki University of Technology in cooperation with the Finnish Air Force. In particular, we concentrate on single aircraft performance optimization by using optimal control theory as well as on the application possibilities of differential games and decision theoretical tools in the modeling of air combat. The presentation at hand gives an overview on these research activities.