عنوان مقاله:

Improved Turbine Engine Hierarchical Modeling and Simulation Based on Engine Fuel Control System

محل انتشار:

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خلاصه مقاله:

Aircraft engines constitute a comp lex system, requiring adequate mon-itoring to ensure flight safety and timely maintenance. The best way to achieve this, is modeling the engine. Therefore, in this paper, a suitable mathematical model from engine controller design point of view, for a specific aero turbine engine is proposed by the aid of MATLAB/Simulink software. The model is capable of reducing costs of actual engine tests and predicting some of important controlled variables, which can usually not be measured directly (e.g. compressor surge margin, the turbine inlet temperature or the engine net thrust). The model has maximum accuracy for maximal variance of the fuel flow input command consistent with the engine control system specifications. So the model is strongly adaptable to the engine control systems and real time applications. Simulation results which proved logical and well founded are obtained from applying an acquired fuel flow function to the engine model.

کلمات کلیدی:

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