

MATERIALS AND STRUCTURES SYMPOSIUM (C2)
Poster Session (P)

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THE IMPROVED FAILURE MODE EFFECTS AND CRITICALITY ANALYSIS METHOD BASED
ON ANALYTIC HIERARCHY PROCESS

Abstract

In this paper, the problems of qualitative analysis using failure mode, effects and criticality analysis method (FMECA) are studied based on the current database of aircraft mechanical products. The feasibility research of improving the traditional FMECA method with Analytic Hierarchy Process method (AHP) is presented. The scale effects of AHP is analyzed, and the index scale method is selected. The steps of improved FMECA method based on AHP are discussed, and the comparative analysis of the results obtained from the new and the traditional methods is performed combining with available cases. It is suggested that more accurate list of reliable key product can be obtained using the new method compared with using the traditional FMECA method, under the condition of the imperfect existing database.