

MATERIALS AND STRUCTURES SYMPOSIUM (C2)
Space Environmental Effects and Spacecraft Protection (6)

Author: Prof. Harijono Djodihardjo
Universitas Al Azhar Indonesia, Indonesia, harijono@djojodihardjo.com

ANALYSIS AND SYNTHESIS OF IMPACT RESILIENT COMPOSITE STRUCTURE USING
COMPUTATIONAL SIMULATION AND COMPOSITE STRUCTURE TAILORING IN ELASTIC
PANEL STRUCTURE

Abstract

Impact resilient structures are of great interest in many Engineering Applications varying from civil, land vehicle, aircraft and space structures, to mention a few examples. To design such structure, one has to resort fundamental principles and take into account progress in analytical and computational approaches as well as in material science and technology. Therefore, in this work it is proposed to look at a generic structure subject to impact loading and carry out analysis and numerical simulation on a flat plate. The analysis will be based on dynamic response analysis. Consideration will only be given to elastic-plastic region. Through such analysis and numerical simulation, effort is devoted to arrive at optimum configuration in terms of loading, structural dimensions, material properties and composite lay-up, among others. Results will be discussed in view of practical applications.