## Nonlinear Structural Behavior of Blast-loaded Corrugated Panels: Analytical and Numerical considerations

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## Summary

The behavior of structures due to blast loading is conveniently represented with single degree of freedom (SDOF) models. These simplifying models try to evaluate a structure using only one physical degree of freedom, the horizontal deflection. Advantages that still indicate the use of these state-of-practice or common practice models include the quick evaluation for assessment of structures, intuitive transition from static to dynamic models. The aim of this study is to estimate the maximum transient displacement and final (permanent) displacement of corrugated panels subjected to uniformly distributed dynamic loads using LS-DYNA and SDOF. SDOF presents a proposed analytical model for prediction the elasticperfectly plastic response of beams. LS-DYNA is nonlinear finite element method which is able to compute the nonlinear structural behavior in dynamic analysis. Several kinds of calculation are performed to compare the results of analytical and numerical method. This paper produces information of predicting response of blast-loaded corrugated panels.