Full Analytical Procedure to Derive P-I Diagram of a Steel Beam under Blast Loading

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Abstract : The aim of this paper is to study a beam extracted from a frame and subjected to blast loading. The demand of ductility depends on six dimensionless parameters: two related to the blast loading, two referring to the bending behavior of the beam and two corresponding to the dynamic behavior of the rest of the structure. We develop a full analytical procedure that provides the ductility demand as a function of these six dimensionless parameters.