

## **Controlling Collapse of Cylindrical Tubes Subjected to Axial Impact Through Perforations**

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Cylindrical tubes are widely used for mitigating impact loads as they can absorb significant amount of energy through progressive collapse, in which buckles form progressively along the cylinder length. The load at which the first buckle forms is invariably higher than that at which the subsequent buckles form. In this study we attempt to reduce this initial peak load, without altering the subsequent collapse mode by introducing perforations. The deformation of axially impacted tubes is recorded using high speed imaging and is correlated with the transmitted load. Numerical simulations are performed to explain the experimental observations.