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Analytical model of thin-walled corrugated tubes with sinusoidal patterns under axial impacting

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Abstract

Corrugated tube with a special corrugated surface has wide engineering applications because it can decrease the impacting force. The dynamic response of corrugated tube under axial impacting belongs to the "Type II structures" response. The main inertia effect in corrugated tube is lateral inertia and the axial inertia effect is negligible. By taking the eccentricity factor and amplitude factor into account, three plastic hinge mechanisms and a theoretical model of dynamic progressive buckling are proposed. The results conclude that

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