**عنوان مقاله:**

The Experimental and Theoretical Study of a Tubular Structure under Internal Explosive Loading

**محل انتشار:**

هجدهمین کنفرانس سالانه مهندسی مکانیک (سال: 1389)

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**خلاصه مقاله:**

Prediction of the maximum transverse deflection of a thin walled cylindrical shell is an important point while studying the dynamic-plastic behaviour of cylindrical shells under explosive loading. Considering a fully closed cylindrical shell that its diameter is larger than its length, it can be concluded that the forehead of the shockwave hits the cap of the shell sooner than it hits the walls. On the other hand, since the decayingconstant of the exponential pressure-time profile is not definitely known for this special case of study, in this paper, the dynamic-plastic behaviour of a cylindrical shell has been studied based on a simplified pressuretime profile. Considering three phases of motion the maximum radial deflection of the shell is then calculated through the analysis of the dynamic equations of the walls. Afterwards, the theoretical calculations are compared with the results of the experimental tests which have been conducted on Aluminum cylindrical shells.

**کلمات کلیدی:**

Explosive Loading, Experimental Analysis,Cylindrical Shell, Dynamic-Plastic Behavior

**لینک ثابت مقاله در پایگاه سیویلیکا:**

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