عنوان مقاله:

Thermoelastic analysis of rotating thick-walled cylindrical pressure vessels with linear variable thickness under bi-directional temperature

محل انتشار:

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خلاصه مقاله:

Using the disk-form multi-layer method (MLM), a semi-analytical thermoelastic solution for pressurized rotating thick cylindrical shells with varying thickness is obtained. The first-order shear deformation theory (FSDT) is used for displacement and bi-directional temperature fields. The thick shell is divided into some virtual disks, and then a set of differential equations for constant thickness are obtained for each virtual disk. The general solution of the thick cylindrical shell is obtained, by applying continuity conditions between the virtual disks. The governing equations, which are a system of differential equations with variable coefficients, have been solved with MLM. Finally, some numerical results are presented to study the effects of mechanical and thermal loading, on the mechanical behavior of .the thick cylindrical shell

کلمات کلیدی:

(Thick cylindrical shell, Variable thickness, Bi-directional temperature fields, FSDT, Multi-layers method (MLM