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عنوان مقاله:

Dynamic Response of Circular Cylindrical Shells under Impact Loads by Spectral Element Method

محل انتشار:

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خلاصه مقاله:

In this paper, the method of spectral element to specify the natural frequencies and the dynamic response of circular cylindrical shells with arbitrary boundary conditions under impact loads has been developed. Displacement filed is expressed in modal form in circumferential direction and exact solution in longitudinal length is extracted in frequency domain that leads to dynamic stiffness matrix evaluation and dynamic solution in the time domain has been specified using IFFT. In the following, natural frequencies for cylindrical shell are calculated and compared with some other results reached in the past. Also, shelldisplacements under impact load are plotted. Making use of the smallest number of elements in spectral element method, and a really big saving of the volume and cost of the computations for reaching some results so close to the precise results makes this method superior to other numerical methods

کلمات کلیدی:

impact load, spectral element method, dynamic stiffness matrix, natural frequency

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