Parametric instability of rotating cylindrical shells subjected to periodic axial loads

Qiyi Dai, Qingjie Cao

PII: S0020-7403(18)30566-6
DOI: 10.1016/j.ijmecsci.2018.07.031
Reference: MS 4443

To appear in: *International Journal of Mechanical Sciences*

Received date: 19 February 2018
Revised date: 4 July 2018
Accepted date: 24 July 2018

Please cite this article as: Qiyi Dai, Qingjie Cao, Parametric instability of rotating cylindrical shells subjected to periodic axial loads, *International Journal of Mechanical Sciences* (2018), doi: 10.1016/j.ijmecsci.2018.07.031

Highlights

- In this paper, the Floquet exponent method is first employed to analyze the parametric instability of rotating cylindrical shells under periodic axial loads.
- The results show that the instability of rotating cylindrical shells may be enhanced under some cases due to the existence of viscous damping.
- The influences of rotation speed, static loading and shell geometrical characteristics on the location and width of instability regions for rotating cylindrical shells are investigated.