

## عنوان مقاله:

Vibration analysis of a turbulent fluid passing through an elbowshaped shell

## محل انتشار:

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## خلاصه مقاله:

Fluids passing through a pipeline can cause internal vibrations within the pipelines. If these vibrations aren't counted for at the design of the pipelines, and the vibration caused by fluid flow resonates with the pipes natural frequency, it could cause destructive damage to the system. So it is important to identify all vibrations a certain pipeline will possibly encounter when designing the system and choosing the material to avoid such a resonance. In this study, using ABAQUS as a CFD solver, we studied the forced and free vibrations caused by a turbulence flow of a fluid with different speeds through a 90 degree elbow pipe. We compared the vibration modes and frequencies for different fluid speeds, and concluded at what natural frequency a resonance may occur leading to a possible pipe breakage.

## کلمات کلیدی:

internal vibration, resonates, natural frequency, abaqus, free vibration, forced vibration, turbulence flow

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/637924>

