Abstract:

Thin walled cylindrical shells are generic structures found to be present in many engineering applications such as lightweight drainage pipe systems. The vibrational behavior of cylindrical shells has been widely studied for the hollow and fluid-filled case; nevertheless, this analysis needs to be taken further for the case when more than one conveying phase is accounted. The present work is devoted to the velocity and force field analysis of finite vertical drainage pipes conveying two-phase flow — air and water — on route towards a structure-borne sound source characterization.