

[Borzì, Alfio; Propst, Georg](#)

Numerical investigation of the Liebau phenomenon. (English) Zbl 1047.76128

[Z. Angew. Math. Phys.](#) 54, No. 6, 1050-1072 (2003).

Summary: The Liebau phenomenon is the occurrence of valveless pumping through the application of a periodic force at a place which lies asymmetric with respect to system configuration. This paper is concerned with two different physical configurations and respective models. Comparison and derivation among the models are discussed. Accurate numerical schemes which solve these models are presented. By means of numerical simulations it is investigated under which conditions valveless pumping takes place.

MSC:

[76Z05](#) Physiological flows

[76M12](#) Finite volume methods applied to problems in fluid mechanics

[92C35](#) Physiological flow

[92C10](#) Biomechanics

Cited in **15** Documents

Keywords:

[elastic tube](#); [valveless pumping](#)

Software:

[HE-E1GODF](#)

Full Text: [DOI](#)