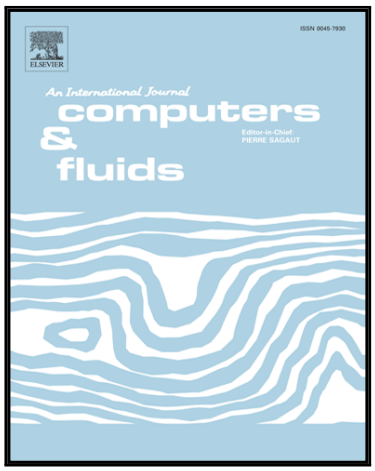
Accepted Manuscript



Algorithm for Analysis of Peristaltic Annular Flows

H.V. Moradi , S. Zandi , J.M. Floryan

PII: S0045-7930(17)30033-6
DOI: 10.1016/j.compfluid.2017.01.020
Reference: CAF 3386

To appear in: *Computers and Fluids*

Received date: 28 September 2016
Revised date: 18 January 2017
Accepted date: 27 January 2017

Please cite this article as: H.V. Moradi , S. Zandi , J.M. Floryan , Algorithm for Analysis of Peristaltic Annular Flows, *Computers and Fluids* (2017), doi: 10.1016/j.compfluid.2017.01.020

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Highlights

- A spectrally accurate algorithm is proposed for the analysis of peristaltic flows in annular geometries.
- The Galileo transformation is used to convert the unsteady physical problem into a steady problem.
- The Stokes stream function is employed to reduce the number of field equations to a single fourth-order partial differential equation.
- Numerical discretization uses Fourier and Chebyshev expansions in the streamwise and radial directions, respectively.
- Difficulties associated with the irregularities of the boundaries are overcome using the immersed boundary conditions method.

ACCEPTED MANUSCRIPT

Download English Version:

https://daneshyari.com/en/article/5011902

Download Persian Version:

https://daneshyari.com/article/5011902

Daneshyari.com