A Heuristic Method for Modeling Three-Dimensional Non-Newtonian Flows of Polymer Melts in Single-Screw Extruders

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PII: S0377-0257(17)30232-X
DOI: 10.1016/j.jnnfm.2017.08.007
Reference: JNNFM 3921

To appear in: *Journal of Non-Newtonian Fluid Mechanics*

Received date: 23 May 2017
Revised date: 19 July 2017
Accepted date: 26 August 2017

Please cite this article as: Christian Marschik , Wolfgang Roland , Bernhard Löw-Baselli , Jürgen Miethlinger , A Heuristic Method for Modeling Three-Dimensional Non-Newtonian Flows of Polymer Melts in Single-Screw Extruders, *Journal of Non-Newtonian Fluid Mechanics* (2017), doi: 10.1016/j.jnnfm.2017.08.007

Highlights

- The pumping characteristics of power-law fluids in single-screw extruders is investigated.
- The flow is assumed to be three-dimensional, isothermal, and fully developed.
- A heuristic optimization algorithm is applied to approximate a large number of numerical solutions.
- The presented analytical model removes the need for time-consuming numerical calculations.