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Radu C Cascaval* (radu@uccs.edu). *Models for Flow Optimization and Control in Arterial Networks*. Preliminary report.

We describe a Boussinesq-type system for modeling the dynamics of pressure-flow in arterial networks, considered as a 1d spatial network. Numerical solutions of the system of PDEs are compared with simplified models based on particle-tracking arguments, and are used to study flow optimization task, depending on the geometry and size of the network. Physiologically realistic control mechanisms are also tested in the context of these simplified models. (Received January 28, 2014)