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A flow-coupled phase-field model of tumour-induced angiogenesis

We present a first attempt to formulate a biophysically motivated model of structural vascular adaptation and angiogenesis. In several models of angiogenesis so far, the model of vascular structural adaptation being used is the one proposed by Pries, Secomb and co-workers. This model was proposed for modelling blood flow in rat mesentery and, therefore, is unlikely to be an accurate model for tumour vasculature. We discuss a model of vascular adaptation based on a biophysical (including elasticity, surface tension, etc) description of the response of capillaries to increased demands of blood flow.