# Singular Limits for Viscoelastic Tumour Models

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### Abstract

We propose a two-species version of a viscoelastic tissue growth model introduced by Perthame and Vauchelet in 2015. Upon showing existence of solutions, we consider two singular limits – the first of which provides a link to free-boundary descriptions of tissue growth while the second limit is a rigorous argument to pass from Brinkman's law to Darcy's law (inviscid limit). The results are based on a sequence of works with David, Debiec, Mandal, Perthame, and Vauchelet.