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Evolution of a pre and post lens tear film with a contact lens MATTHEW GERHART, DANIEL ANDERSON, George Mason University — The work is the development, implementation, and analysis of a two-dimensional tear film model including a porous contact lens. The geometry of the problem is: a pre-lens layer that is a thin tear film between the outside air and contact lens, a contact lens that is a rigid but movable porous substrate, and a post-lens layer that is a thin film layer between the contact lens and the cornea. We are looking at short and long term behavior of the evolution of the thin film in the pre-lens layer coupled with the porous layer and the thin squeeze film in the post-lens layer. We model the different behaviors that arise as the Darcy number, evaporation effects, and boundary flux conditions change.

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