

Abstract Submitted
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Modeling glyocalyx of the tear film as poroelastic layer¹ JAVED SIDDIQUE, Penn State York, ANTONIO MASTROBERARDINO, Penn State Erie, RICHARD BRAUN, University of Delaware, DANIEL ANDERSON, George Mason University — In this study we investigate a one-dimensional model for the evolution of the tear film subject to locally elevated evaporation at its anterior surface. We formulate a thin film model based on a combination of lubrication theory and mixture theory in order to understand the dynamics between the aqueous layer and the glyocalyx, which we treat as a poroelastic region. The model includes the physical effects of evaporation, surface tension, and viscosity.

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