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Soft Contact Lens Hydration Modeling. Preliminary report.

Excessive dehydration in contact lenses can lead to dry eye and general discomfort for the wearer. Previous work in modeling the hydration levels in contact lenses has demonstrated the convergence of the hydration level to an oscillatory steady state whose mean value varies linearly along the spatial domain. In this work, we present a simpler model, based on the heat equation, which reproduces this phenomenon. We also present a means of predicting this steady state. (Received September 22, 2015)