

Abstract Submitted  
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**The application of non-Newtonian models to thin film flow** TIM MYERS, University of Cape Town — In this talk I will describe an investigation into the use of lubrication models on thin film flow. Power law, Ellis and Carreau models will be compared for free surface flow and flow within a channel. It will be shown that the Ellis law (or a slight modification) can give very similar viscosity curves to Carreau. The three models will then be compared for thin film flow with a constant height free surface. For low shear rates the power law model can give very inaccurate predictions. Having shown Carreau and Ellis may produce similar results I will then study flow in a channel for Ellis and power law fluids. Again the power law can give inaccurate results due to the high viscosity around the turning point for the velocity.

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