

Abstract Submitted  
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**Fingering instability of Bingham fluids** SHILPA GHADGE, NEIL BALMFORTH, University of British Columbia, TIM MYERS, University of Cape Town — Contact line instabilities have been extensively studied and many useful results obtained for industrial applications. Our research in this area is to explore these instabilities for non-Newtonian fluids which has wide scope in geological, biological as well as industrial areas. In this talk, we will present an analysis of fingering instability near a contact line of the thin sheet of fluid flowing down on a moderately inclined plane. This instability has been well studied for Newtonian fluids. We explore the effect of a yield strength of the fluid on this instability. We have conveniently assumed the presence of the precursor film of small thickness ahead of the fluid film to avoid some mathematical singularities. Using a lubrication-type approximation, we perform a linear stability analysis of a straight contact line. We will show comparison with some experimental results using suspensions of kaolin in silicone oil as a yield strength fluid.

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