Viscous instabilities in flowing foams: A Cellular Potts Model approach. SOMA SANYAL, JAMES GLAZIER, Biocomplexity Institute, Department of Physics, Indiana University — The Cellular Potts model has been succesfully used to model foam drainage as well as stress and strain in sheared foams. Here we investigate instabilities due to the flow of a single large bubble in a monodisperse flowing foam using the Cellular Potts model. As expected, above a certain threshold velocity, the large bubble moves faster than the mean flow. Our simulations reproduce recent experimental results of foam flow in a Hele-Shaw cell and reflect the importance of the cellular Potts model in successfully studying foam rheology.

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