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Roll wave instability in Guinness beer TOMOAKI WATAMURA, KAZUYASU SUGIYAMA, FUMIYA IWATSUBO, Osaka University, KENICHIRO YAMAMOTO, YUKO YOTSUMOTO, TAKASHI SHIONO, Kirin HD Co. Ltd. — To gain the insight into the texture formation in a glass of Guinness beer, we performed experiments on the bubble distribution in Guinness poured in an inclined container, and observed how the texture forms. We also report the texture-formation in controllable experiments using particle suspensions with precisely specified diameters and volume-concentrations. The hydrodynamic condition for the texture-formation is analogous to the critical point of the roll-wave instability in a fluid film at Froude number Fr ¿ 1. We conclude that the roll-wave instability of the gravity current is responsible for the texture-formation in a glass of Guinness beer.

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