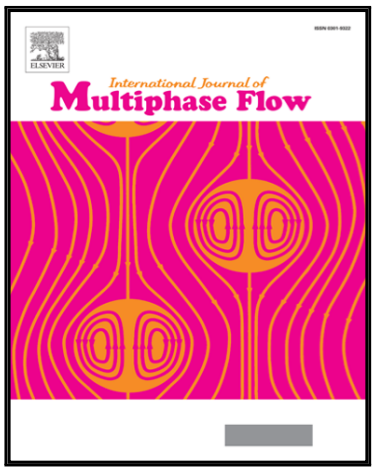

Instabilities of a gas-liquid flow between two inclined plates analyzed using the Navier-Stokes equations

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PII: S0301-9322(16)30700-5
DOI: 10.1016/j.ijmultiphaseflow.2017.05.011
Reference: IJMF 2601

To appear in: *International Journal of Multiphase Flow*

Received date: 18 November 2016
Revised date: 6 May 2017
Accepted date: 30 May 2017

Please cite this article as: Yu.Ya. Trifonov , Instabilities of a gas-liquid flow between two inclined plates analyzed using the Navier-Stokes equations, *International Journal of Multiphase Flow* (2017), doi: 10.1016/j.ijmultiphaseflow.2017.05.011

Highlights

- The goal is to find all possible unstable modes of the two-phase flow varying the liquid Reynolds number and the gas superficial velocity in wide range and with a small step.
- We found two modes of the unstable disturbances and computed the wavelength and phase velocity of their neutral disturbances varying the liquid and gas Reynolds number.
- Despite a thorough search, we did not find the instability that it is possible to relate with the unstable mode of the viscous (or inviscid) Kelvin-Helmholtz heuristic analysis.