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**Oana Marin\***, 455 Talcott Ave, Lemont, IL 60439, and **Marieme Ngom**. *Uncertainty quantification of surface tension in a rising bubble using boundary integrals*. Preliminary report.

We study effects of surface tension on a multi-phase problem, specifically on the problem of a rising bubble. Surface tension is a constant measured via experiments, and thus prone to error. By employing uncertainty quantification we assess the effects on pressure difference, mean curvature and other quantities of interest. Addressing this issue has been difficult using volumetric methods, however a boundary integral based formulation assures that the only errors stem from numerical discretization and mathematical model. Additionally we showcase how proper algebraic treatment can lead to an efficient treatment on this given problem. (Received September 18, 2019)