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Investigating the stability of surface nanobubbles ROBIN BERKELAAR, ERIK DIETRICH, STEFAN KOOIJ, HAROLD ZANDVLIET, DETLEF LOHSE, University of Twente — The primary attribute of interest of surface nanobubbles is their unusual stability and a number of theories trying to explain this have been put forward. Interestingly, the actual dissolution of nanobubbles is a topic that did not receive a lot of attention yet. We applied different experimental procedures in which gaseous nanobubbles should dissolve, according to the theories. In method A, the nanobubbles were exposed to a flow of degassed water for 96 hours. In method B, the ambient pressure was lowered in order to degas the liquid and the nanobubble-like objects. In method C, the liquid was evaporated and the geometry of the nanobubbles was indirectly studied in micrometers thick water films. The effects of these three methods on the stability of nanobubbles will be discussed.

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