

## BEHAVIOUR OF PAIRS OF BUBBLES IN BUOYANCY - PRELIMINARY STUDY

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**Abstract.** This work details the analysis of a pair of 1mm diameter air bubbles raising in water due to buoyancy. The main objective of this study is to validate the Gerris Flow Solver as a simulation tool for this problem and with the aim to use it to investigate the behaviour petroleum droplets in water. For this validation the experimental studies of Kok and van Wijngaarden were taken as a reference. Therefore, keeping the diameter constant, initial relative positions between bubbles were modified in order to determine whether the bubbles coalesce or not. The simulations were successful, capturing the coalescing ranges observed experimentally allowing to confirm the reliability of the software tool.