Colloidal probe atomic force microscopy measurements on pristine gas bubbles, agglomerates and particle-laden gas bubbles

This dataset contains experimental Atomic Force Microscopy (AFM) force-displacement measurements of poorly wetted alumina particles (colloidal probes) < 15 µm interacting with pristine gas bubbles, agglomerates and particle-laden gas bubbles (hetero-coagulates) in an aqueous environment. The data was generated in the context of the Collaborative Research Center CRC 920 (Project ID 169148856 – subproject B04) that is funded by the German Research Foundation (DFG). The data set is of interest for researches that study the agglomeration or hetero-coagulation in liquid environment, and it is expected to be of particular interest to those that are concerned with the simulation and modeling of these processes (for example by Discrete Element Method). The AFM raw data was baseline corrected to increase the accessibility of the data sets to those less familiar with the AFM. A detailed interpretation of the AFM data in this repository is found in https://doi.org/10.1021/acs.langmuir.3c01781 and https://doi.org/10.1016/j.colsurfa.2024.134660.