Horizontal annular flow modelling using a compositional based interface capturing approach[1] DIMITRIOS PAVLIDIS, ZHIZHUA XIE, JAMES PERCIVAL, Imperial College London, JEFFERSON GOMES, University of Aberdeen, CHRIS PAIN, OMAR MATAR, Imperial College London — Progress on a consistent approach for interface-capturing in which each component represents a different phase/fluid is described. The aim is to develop a general multi-phase modelling approach based on fully-unstructured meshes that can exploit the latest mesh adaptivity methods, and in which each fluid phase may have a number of components. The method is compared against experimental results for a collapsing water column test case and a convergence study is performed. A number of numerical test cases are undertaken to demonstrate the method's ability to model arbitrary numbers of phases with arbitrary equations of state. The method is then used to simulate horizontal annular flows.

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