Comparison of several numerical methods for the computation of a liquid-bubble interaction

P. Helluy , S. Müller

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The numerical simulation of compressible two-phase flows is still a challenge. For example, for liquid-gas flows, classical conservative approaches lead to pressure oscillations that usually spoil the computations. Cures have been proposed until recent years [2], [4], [1], [3], [5], *etc.* They are generally based on non-conservative schemes and relies on special forms of pressure laws. We will recall the more classical approaches. In order to apply these methods to the realistic simulation of a bubble collapse, numerical difficulties still has to be faced: bad precision, extreme states, generality of the pressure law. Several numerical experiments will illustrate these difficulties.

References

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[0]ULP/IRMA Strasbourg, helluy@math.u-strasbg.fr
[0]Institut für Geometrie und Praktische Mathematik, RWTH Aachen, 52056 Aachen, Germany, mueller@igpm.rwth-aachen.de