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CONSERVATIVENESS OF THE EULERIAN TWO-FLUID MODEL

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Abstract. In general, the Finite Volume Method (FVM) relies on an integral form of the balance equations, where the conservative form provides some degree of consistency. In fact, the conservative form allows to accurately predict solutions when shock-waves are involved. However, for two-fluid model, non-conservative formulations are proper to deal with extreme conditions, such as phase disappearance limits. In this work, three different commonly adopted formulations are studied in depth for various multifluid tests. For all cases, the conservative form gives the most accurate solutions, but, one of the non-conservative form, the phase-intensive form, provides a natural way to handle the phase disappearance limit with slight loss in accuracy of the velocity field.