

Relative energy approach to a diffuse interface model of a compressible twophase flow

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Abstract: We propose a simple model for a two phase flow with diffuse interface, consisting of the compressible Navier-Stokes system coupled with the Allen-Cahn equation. Using the so-called relative energy inequality, we show that strong solutions are unique in the class of admissible weak solutions. Furthermore, we perform the low Mach number limit, obtaining the standard incompressible model.