

Convergence of capillary fluid models: from the non-local to the local Korteweg system

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In this talk we are interested in the compressible Navier-Stokes model endowed with a capillary term. After recalling fundamental results on the compressible Navier-Stokes and local Korteweg systems in Besov spaces, we focus on models with non-local capillary term (depending on a small parameter). When the initial data are close to a stable constant equilibrium state, we prove global well-posedness and study the convergence, as the parameter tends to zero, towards the local Korteweg model in Besov spaces tailored to the non-local capillarity (partially joint work with B. Haspot). For large initial density, and when the equilibrium is not necessarily stable, we obtain local results.