**Siegfried Müller**

*Modeling phase transitions for compressible multi-phase flows*

To describe multi-phase flows we use a Baer-Nunziato type model according to Saurel and Abgrall, where each phase has its own pressure, velocity and temperature. Beside relaxation terms for pressure and velocity we introduce new relaxation terms for temperature and Gibbs free energy to insert the effects of heat and mass transfer. We obtain a new model, which can deal with transition fronts, where heat and mass transfer occur.
We apply this to a three-phase system composed of liquid, vapor and gas to investigate the influence of phase transition on the collapse and rebound of a spherical bubble. We give numerical results and compare with experimental data.
This is joined work with Maren Hantke and Ee Han from the Otto-Guericke-University of Magdeburg.