I will present a new simple Eulerian method for treatment of moving boundaries in compressible fluid computations. Our approach is based on the extension of the interface tracking method recently introduced in [1] in the context of multifluids. The fluid domain is placed in a rectangular computational domain of a fixed size, which is divided into Cartesian cells. At every time moment, there are three types of cells: internal, boundary, and external ones. The numerical solution is evolved in internal cells only. The numerical fluxes at the cells near the boundary are computed using the technique from [1] combined with a solid wall ghost-cell extrapolation and an interpolation in the phase space. The proposed computational framework is general and may be used in conjunction with one’s favorite finite-volume method. The robustness of the new approach is illustrated on a number of one- and two-dimensional numerical examples.

This is joint work with Alina Chertock.

References