

Compressible Euler limit from Boltzmann equation with
boundary

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Abstract : We consider the Boltzmann equation with Maxwell boundary condition in half space. By employing the approach of Hilbert expansion, and coupled kinetic boundary layer equations with Maxwell condition and linearized Prandtl boundary equation with Dirichlet-Neumann mixed type boundary condition, we justify the compressible Euler limit. This can be viewed as a generalization of Caffisch's classic work to the domain with boundary case. This is a joint work with Yi-long Luo and Shaojun Tang. We also discuss the acoustic limit with incoming boundary data, which is a joint work with K. Aoki and F. Golse.