Numerical study of the strong evaporation of a binary mixture

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The problem of the one-dimensional evaporation of a binary mixture is investigated by numerically solving a system of two coupled Boltzmann equations. The numerical method is based on the direct discretization of the Boltzmann equation and the Monte Carlo evaluation of the collision integrals. It is assumed that the fluid flows between an evaporating plate and a totally absorbing plate. The spatial profiles of macroscopic quantities as well as evaporation rates have been calculated for values of the Knudsen number between 1/2 and 1/20.

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