

Abstract Submitted
for the DFD12 Meeting of
The American Physical Society

Flow of a rarefied gas around moving vanes in Crookes radiometer: Numerical analysis of a model problem SATOSHI TAGUCHI, Department of Mechanical Engineering and Intelligent Systems, The University of Electro-Communications, KAZUO AOKI, Department of Mechanical Engineering and Science, Kyoto University — A model for flows around moving vanes in a Crookes radiometer is proposed. More precisely, a series of uniformly spaced parallel flat plates heated on their single sides, moving in a channel at a constant speed, is considered in the case where the direction of motion is perpendicular to the plates. The flow around the plates is investigated numerically on the basis of the ellipsoidal statistical (ES) model of the Boltzmann equation and the diffuse reflection boundary condition by means of an accurate finite-difference method. Special attention is paid to the discontinuity contained in the velocity distribution function. The pressure distribution around the edge is found to be different from that reported previously [S. Taguchi and K. Aoki, *J. Fluid Mech.* **694**, 191–224 (2012)], in which the plate is assumed to have a stationary position in a closed container. The reason for the difference is also discussed.

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Date submitted: 02 Aug 2012

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