Thermal Plumes using the Lattice Boltzmann Equation[1] RAÚL
RECHTMAN, GUILLERMO BARRIOS DEL VALLE, ERICK ROMAN, Centro
de Investigación en Energía, UNAM — The lattice Boltzmann equation (LBE) is
a simple and powerful method for the study of flows. To study heat transfer a
temperature field is coupled to the usual particle field via the body force (G. Barrios
del Valle et al JFM, **522**, 91 (2005)). In this contribution we study plume formation
in two dimensional cavities with one or more plumes using the LBE scheme with
heat transfer. Our results compare favorably with experiments and other numerical
techniques (E. Moses et al, JFM **251**, 581 (1993), E. Kaminski, C. Jaupart, JFM
478, 287 (2003), K. Ichimaya, H. Saiki, Int. J. Heat and Mass Transfer, **48**, 3461
(2005)).

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