

Abstract Submitted  
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**Thermal Plumes using the Lattice Boltzmann Equation**<sup>1</sup> 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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