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Dedication to Pierre Lallemand on the Occasion of His Retirement

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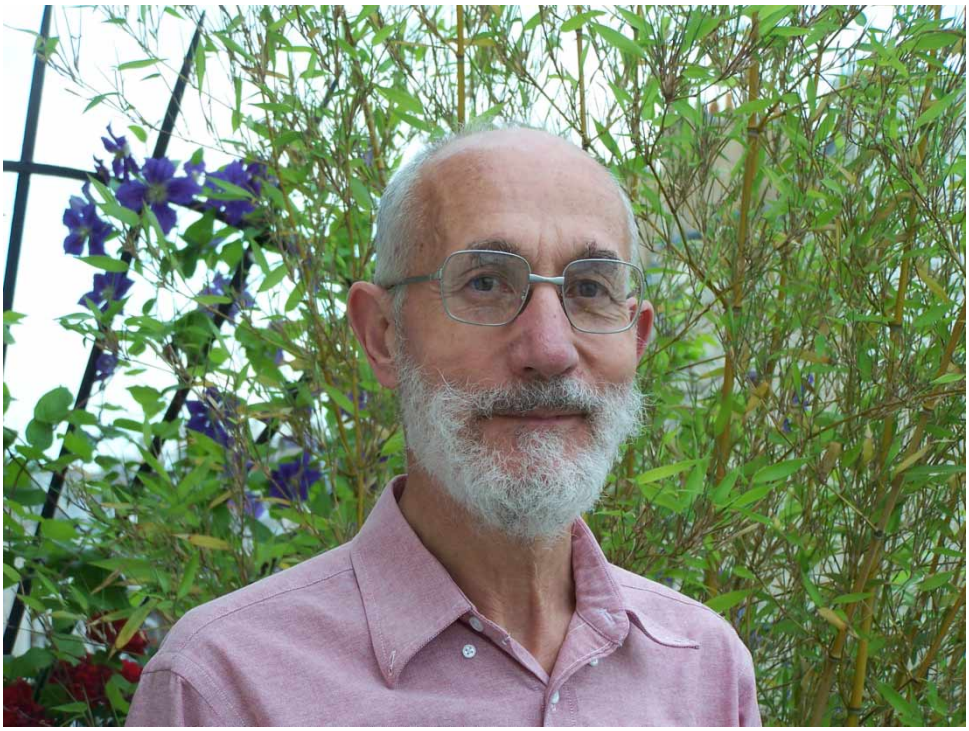

The fourth international conference for mesoscopic methods in engineering and science (http://www.icmmes.org), held in Munich, Germany, 16–20 July 2007, was closed with a celebration honouring Dr Pierre Lallemand on the occasion of his retirement from the Centre National de la Recherche Scientifique (CNRS) after more than 40 years of service.

Pierre Lallemand obtained his Bachelor's degree in Physics (*Agrégation de Physique*) at École Normale Supérieure (ENS), Paris, France in 1963. He did his graduate work on the stimulated Raman effect and self-focusing of laser beams at Harvard University with the Nobel laureate Nicolaas Bloembergen. He obtained his PhD degree from the University of Paris in 1966 and then joined CNRS as a member of the *Laboratoire de Spectroscopie Hertzienne* at ENS. In 1988, Pierre became the director of the newly established Laboratoire de Physique Statistique; in 1992 he became the director of the Physics Department of ENS. In 1994, he left ENS to direct another newly established laboratory: Applications Scientifiques du Calcul Intensif (ASCI). Pierre served as the director of ASCI until the end of 2003. He then moved to the Laboratoire d'Informatique pour la Mécanique et les Sciences de l'Ingénieur until his retirement in 2007.

From 1978 to 1992, Pierre also served as the scientific director of the Direction des Recherches et des Études Techniques (DRET), *Délégation Générale de l'Armement* in the French Defence Ministry, where his responsibilities included overseeing French Army funding of basic research in academia and industry. It was during his tenure as the director of DRET that he supported one of the earliest workshops on lattice-gas automata (LGA) in 1991 (Boon, 1992).

Pierre's scientific career can be divided into two halves. Until 1984, his work focused on experimental study of nonequilibrium behaviour of fluids and gases using spectroscopic techniques. Although his experimental work in spectroscopy and nonequilibrium statistical mechanics is relatively unfamiliar to most people in this community, it constitutes an important part of his scientific contribution.

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Beginning in 1984, Pierre shifted his attention to numerical techniques for modelling and simulating various hydrodynamic systems. During this phase of his scientific career, Pierre has become one of the most renowned figures in this community. In collaboration with his colleagues, he has made lasting contributions to the fields of LGA and lattice Boltzmann equation (LBE). He was among the first to apply LGA models to computational fluid dynamics in two and three dimensions (d'Humières *et al.* 1985; d'Humières *et al.* 1986; Frisch *et al.* 1986), to diffusion–reaction flows and interfacial dynamics (Clavin *et al.* 1988), and to thermal fluids (Grosfils *et al.* 1992; Grosfils and Lallemand 1993); he is a co-author of the paper on the lattice Bhatnagar–Gross–Krook (BGK) model (Qian *et al.* 1992), which has become one of the most cited papers in the field (although he never uses the lattice BGK model himself); and he was among the first to work on the LBE models for viscoelastic fluids (Giraud *et al.* 1997; Giraud *et al.* 1998; Lallemand *et al.* 2003). Pierre and his colleagues have proposed a practical and effective treatment for boundary conditions in arbitrary geometries (Bouzidi *et al.* 2001). He has applied the dispersion-equation analysis to study the properties of various LBE models (Lallemand and Luo 2000; Lallemand and Luo 2003). Much of his work on LGA and LBE methods undoubtedly draws on his earlier experience in experimental generalised hydrodynamics.

Pierre seems to prefer to view modelling from a physicist's standpoint: he insists that numerical models must be simple, practical and useful; he exhibits little interest in theoretical hair-splitting.

Markedly accomplished, well respected and even revered by many of his colleagues, yet forever gentle and generous, Pierre has a kind and humble spirit that brought out the best of his fortunate collaborators – Pierre's subtle and lasting influence can be keenly felt throughout their work.

Although Pierre has officially retired, it will be hard for those who have known him to imagine that he will actually 'retire' from working on things which arouse his curiosity and interest. Retirement can only mean that from now on, Pierre will operate from his own kingdom and on his own terms. We all wish Pierre a happy and productive retirement, and we have the pleasure to dedicate this special issue to him.

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