Prof. Jacques-Louis Lions
Former President, Academy of Sciences and Professor of Mechanical Sciences, Collège de France and Ecole Polytechnique, Paris, France

Most important awards, prizes and academies

Academy of Sciences of Paris (1973); Royal Society of Sciences, Liège (1973); Accademia delle Scienze e Lettere, Milano (1977); Academia Brasileira de Ciencia (1979); USSR Academy of Sciences (1982); Royal Academy of Belgium (1986); American Academy of Arts and Sciences (1986); International Academy of Astronautics (1986); Founding Member of the Acad-emia Europaea (1988); Member of the Pontifical Academy of Sciences (1990); Member of the Ukrainian Academy of Sciences (1991); Member of Russian Academy of Sciences (1992); Member of the Chilean Academy of Sciences (1993); Member of the Argentinian Academy of Sciences (1994); Member of the Royal Society (1996); Member of the National Academy of Sciences USA (1996); Member of TWAS (Third World Academy of Sciences) (1996); Member of FORUM France-Japan (1996); Fellow of Tata Institute of Fundamental Research, Bombay (1996); Royal Academy of Sciences of Spain (1997); Portugal Academy of Sciences (1997); Foreign Member of KAST (Korean Academy of Sciences and Technology) (1997); Foreign Member of Academy of Sciences of China (1998); Member of Lincei Academy (1998). John von Neumann Prize (1986); Japan Prize (1991); Harvey Prize (1991); Reid Prize, SIAM (1998).

Summary of scientific research

Linear and non linear partial differential equations; interpolation of function spaces; control of distributed systems; analysis of models in climatology; numerical analysis of partial differential equations; parallelism – decomposition methods.

Main publications

Published Books: More than twenty books, translated into English, Russian, Chinese and sometimes into Japanese: *Equations différentielles opérationnelles et Problèmes aux limites*, Springer-Verlag (1961); *Quasi-Réversibilité* (avec R. Lattes), Dunod (1967); *Problèmes aux limites non homogènes et Applications* (avec E. Magenes), 3 vol., Dunod, Paris (1968); *Sur le Contrôle optimal de systèmes gouvernés par des équations aux dérivées partielles*, Dunod (1968); *Quelques méthodes de résolution des problèmes aux limites non linéaires*, Dunod (1969); *Les inéquations en Mécanique et en Physique* (avec G. Duvaut), Dunod (1972); *Analyse numérique des inéquations variation-nelles* (avec R. Glowinski et R. Tremolieres), 2 vol., Dunod-Bordas, Paris 1976); *Perturbations singulières dans les problèmes aux limites et en Contrôle optimal*, Springer Verlag, NY (1973); *Sur quelques questions d'Analyse, de Mécanique et de Contrôle optimal*, Presses de l'Uni. de Montréal (1976); *Applications des inéquations variationnelles en Contrôle stochastique* (avec A. Bensoussan), Dunod-Bordas, Paris (1978); *Asymptotic Analysis for Periodic Structures* (avec A. Bensoussan et G. Papanicolaou), North-Holland, Amsterdam (1978); *Some Methods in the Mathematical Analysis of Systems and their Control*, Science Press, Beijing (China) et Gordon & Breach Science Publishers Inc., New York (1981); *Contrôle impulsionnel et inéquations variationnelles* (avec A. Bensoussan), Dunod-Bordas, Collection M.M.I., Paris (1982); *Contrôle des systèmes distribués singuliers*, Gauthier Villars, Collection M.M.I., vol. *13*, Paris (1983); *Analyse mathématique et calcul numérique pour les Sciences et les Techniques* (avec R. Dautray), en 3 vol., Masson, Paris (1984-1985). Réédition en 9 volumes, Masson, Paris (1988); *Modelling, Analysis and Control of Thin Plates* (with J.E. Lagnese), Masson, Paris (1988); *Contrôlabilité exacte, Perturbations et Stabilisation de Systèmes Distribués*, Masson, Paris, Collection R.M.A. (1988), Perturbations, vol. R.M.A. *9* (1988); *"El Planeta Tierra", El Papel de las Matematicas y de los Super Ordenadore*. Traduction: I. Diaz et M. Artola Mendez, Publication: Instituto de España, Espasa Calpe S.A., Madrid, *8* (1990); *Sentinelles pour les systèmes distribués à données incomplètes*. Masson, Paris (1992); *Models for the coupled atmosphere and ocean* (with R. Teman and S. Wang), Computa-tional Mechanics Advances, Ed. North Holland, vol. 1 n° 1 (1993); *Sur le contrôle parallèle des systèmes distribués* (with O. Pironneau), CRAS, Paris, t. 327, Série 1, 993-998 (1998) (dédié à la mémoire de Jean Leray); *Algorithmes parallèles pour la solution de problèmes aux limites* (with O. Pironneau), (dédié à la mémoire de Jean Leray), C.R.A.S. 327, 947-952 (1998); *Parallel decomposition of control problems for Navier-stokes equations* (with O. Pironneau) (dedicated to A. Chorin), Berkeley (1998); *Approximation of elliptic problems by decomposition methods* (with O. Pironneau). To appear (1998); *Decomposition methods and Lagrange multipliers* (with O.

Pironneau) (1998); *Domain decomposition methods for CAD* (avec O. Pironneau), C.R.A.S., t. 328, Série I, 73-80 (1999); *Decomposition of energy, spaces and applications* (with A. Glowinski and O. Pironneau), C.R.A.S., Paris (1999), to appear.

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