

A short biography of Jean Jacques MOREAU



Jean Jacques Moreau was born on 31 July 1923, in BLAYE (GIRONDE). “Agrégé” in Mathematics and Doctor of Mathematics (University of Paris), he began his career as a researcher at the Centre National de la Recherche Scientifique (CNRS) before being appointed as Professor of Mathematical Methods in Physics at Poitiers University, and then Professor of General Mechanics at Montpellier University II, where he has spent most of his career. Today he is Emeritus Professor in the Laboratoire de Mécanique et Génie Civil, joint research unit at Montpellier University II - CNRS.

The central theme of his research is nonsmooth mechanics, a field whose applications concern for example contacts between rigid or deformable bodies, friction, plastic deformation of materials, wakes in fluid flows, and cavitation... The helicity invariant in the dynamics of ideal

fluids, discovered by Jean Jacques Moreau in 1962, provides a starting point for the consideration of certain problems arising in fluid dynamics. His mathematical knowledge equipped him to develop theoretical tools adapted to these subjects and these have become standard practice in nonsmooth mechanics. Since the sixties, this activity has led him to important contributions in the construction of nonsmooth analysis, a mathematical field that is likewise of interest to specialists in optimisation, operational research and economics. He thus founded the Convex Analysis Group in the 1970s, at the Mathematics Institute at Montpellier University II, which has continued, under a succession of titles, to produce outstanding contributions.

Since the end of the 1980s, Jean Jacques Moreau has focused more closely on the numerical aspects of the subjects he has been studying. He notably devised novel calculation techniques for the statics or dynamics of collections of very numerous bodies. The direct applications concern, on one hand, the dynamics of masonry works subjected to seismic effects and, on the other, the largely interdisciplinary field of the mechanics of granular media. His computer simulations have allowed him to make substantial personal contributions to this mechanics, while his numerical techniques have found applications in seismic engineering and rail engineering (TGV, train à grande vitesse, ballast behavior).

Jean Jacques Moreau has been awarded a number of prizes by the Science Academy, including the Grand Prix Joanidès. He spent a year as guest researcher at the Mathematics Research Centre at Montreal University, and has been invited abroad on numerous occasions by the top research teams in his field. He is author, co-author and editor of several advanced works on contact mechanics and more generally, on nonsmooth mechanics, and has also published a two-volume course in mechanics that has greatly influenced the teaching of this discipline. For numerous academics Jean Jacques Moreau has been and truly remains a Master of Mechanics.