

Obituary



Jean Donea

9 June 1937–17 June 2004

Jean Donea passed away after a sudden short illness at his summer home in Spain on 17 June 2004. He was born on 9 June 1937 in a small town west of Liège (Belgium) where French, German and Flemish cultures have left their influences. His family was not very wealthy; in fact, Jean used to joke recalling that his grandfather ‘de Donea’ had to sell his name preposition, ‘de’. Jean, the eldest of the children, obtained his degree in Civil Engineering from the University of Liège in 1961.

The leading edge in engineering mechanics during those years at the University of Liège was provided by two outstanding professors: Charles Massonnet and Baudouin M. Fraeijs de Veubeke. Jean had the opportunity and the ability to work with both of them. He had a profound respect for both professors and both research groups. Just after his graduation he initiated his research career with Professor Massonnet in the civil engineering department. He worked for three years in post-critical behavior of stiffened plates.

Then, in 1965, he was hired by the European Commission to join Euratom, where Europe was concentrating its joint efforts in developing nuclear research. Recall that Euratom (European Atomic Energy Community) was created by one of the Treaties of Rome in 1957 (the other treaty was for the European Economic Community, which represented the first step for the current European Union). Jean was profoundly marked by this European dream of constructing a Europe able to leave behind a history of fights, skepticism and, most of the time, ignorance between countries.

In 1965 before moving to Italy, he married Marie-Paule and they began a long and fruitful period in northern Italy at the Joint Research Center (Ispra). There he developed the majority

of his career first as an engineer and then as a researcher. In fact, Jean was very quickly attracted by research and was crucial in fostering quality research in his group. Modesty was one of Jean's many virtues and it has characterized his whole scientific career; in particular, he was suggesting doctoral topics for his entourage even before thinking on his own thesis. He completed his doctorate in Applied Sciences at the department of mechanical engineering in the University of Liège under the supervision of Professor Fraeijs de Veubeke in 1973. His thesis (on variational methods for mechanical and thermal problems in nuclear technology) showed, on one hand, his life-long mission in finite elements and, on the other hand, that his interests were broadening from structures to thermal and soon fluid problems, all driven by the nuclear applications of interest in Ispra.

From 1977 to 1989 he was responsible for the Structural Mechanics group in the Division of Applied Mechanics of the Joint Research Center. During these years he was especially active in research, he contributed original and exceptional pieces of research in fluid-structure interaction (in particular, his work on arbitrary Lagrangian-Eulerian formulation) and for accurate time integration in flow problems. He worked in time integration of transient pure convective systems and fractional-step methods for convection-diffusion (viz. Navier-Stokes equations). Inspired by the finite difference community, with whom he always nurtured excellent relations, he captured the essence of coupling space and time in convection equations realizing the importance of high-order time schemes combined with a proper finite element spatial discretization. His 1983 paper on Taylor-Galerkin methods (third-order in time) is the keystone of his contributions for convection dominated problems that he always approached from a transient perspective.

More amazing is the fact that he was able to combine these intensive research activities with extraordinary skills in management. During this period and much more from 1990 to 1996, as Head of the Structural Mechanics Division, and in spite of his clear preferences for research, he devoted all the necessary time to managerial duties. He was convinced that this was his duty (this commitment to service was quite unique in Jean). He extended this vision to every aspect in his life. For instance, his approach to reviewing was high above the average standards in invested time, effort and thoroughness. Obviously, this was very much appreciated by his Journal editors. In particular, he had a 'penchant' for the *International Journal for Numerical Methods in Fluids* that he followed from its beginnings (recall that he participated in the very first number of the first volume in this journal).

This dual trust, high quality research and good management put Ispra, this little town in northern Italy, on the map of computational mechanics, bringing to the center and to his house, which was always open, young promising researchers who are today's prominent figures in the field. He ensured high-quality standards for the research in his group. At the same time he was able to carry out a visionary project (convincing first all the national authorities of the European Union) building the largest reaction-wall in Europe. In fact, he left Ispra in 1996 just after the inauguration of ELSA (European Laboratory for Structural Assessment).

This early retirement was an excuse to invest time in his two favorite 'hobbies': research and teaching. His devotion for teaching was an old story: during his 31 years at Ispra, he would sacrifice his own holidays to teach at the Politecnico de Milano. Jean's retirement was very particular; he divided his heart between North and South, and became a Faculty Professor at Liège and Visiting Professor at Barcelona where he delivered courses and advised graduate students. He still found time to write a book where he divulged his knowledge, experience and

contributions in numerical methods for flow problems. His energy, activities and his working rhythm were clearly not those of a standard retiree.

In spite of his scientific and professional accomplishments, the human qualities of Jean were even more remarkable. He was unquestionably a gentleman both professionally and personally. His modesty, sense of duty and fine humor were assets that complemented the fact that he was an eminent researcher and scholar. He was a reference for his co-workers. He made us what we are today, he taught us our job at the service of research, the commitment for work and the sense of accomplished duty.

Jean always had time to discuss, help or counsel. He had the chance to count always on his wife, Marie-Paule. They shared the best times and the difficult ones. Together they developed affectionate relations with their friends, collaborators and colleagues who were warmly received in their homes in Italy, Belgium or Spain.

This combination made Jean a remarkable person. We all mourn his passing, but we also should praise the privilege of having shared time and research with him. Jean will always remain as a remarkable scientist and researcher, unanimously appreciated by his professional, intellectual and human abilities.

ANTONIO HUERTA