Albert Tarantola, a distinguished Spanish-French physicist and geoscientist, passed away 6 December 2009 at the age of 60. His unexpected death is a great loss, not only to his family, but also to members of the scientific community to which he had dedicated his life and work.

Albert Tarantola
1949–2009

Albert was born in Barcelona in 1949. After studies in Barcelona, he went to Paris where he in 1976 was conferred with the degree Docteur de Spécialité in theoretical astrophysics at Université de Paris 6 for a thesis titled Etude en relativité générale de l'évolution des amas de galaxies. He subsequently inaugurated his research in inverse problems, work that later became theoretically and practically momentous for geophysics and other fields of research. In 1983, Albert was appointed professor at the Institut de Physique du Globe de Paris, and 1991 he was promoted to professor in the category classe exceptionnelle. Albert received a number of awards and academic distinctions for his work, including honors and awards from Institut de France—Académie des sciences, European Association of Exploration Geophysicists, American Geophysical Union and Le Centre National de la Recherche Scientifique (CNRS), and in 2004 he received an honorary doctorate at Copenhagen University.

Back in 1981, Albert was conferred with the degree Docteur d'Etat (PhD) for the thesis titled Essai d'une approche générale du probléme inverse, whose main ideas were published in 1982 in the papers "Inverse problems = Quest for information" (*Journal of Geophysics*) and "Generalized nonlinear inverse problems solved using the least-squares criterion" (*Reviews of Geophysics*). These papers became the foundation of a new probabilistic school of inverse problem theory whose formulation was especially suitable for numerical solution of a range of scientific problems.

Through his writings on the probabilistic view of inverse problems, Albert became one of the most influential mathematical geoscientists of his time. His books and papers on this subject are well known. They have provided a coherent and practical basis for data inversion for a large part of the geoscientific community, not least because of Albert's algorithmical viewpoint: Only few steps separate the reading of Albert's book and the implementation of his methods.

Albert started out as an astrophysicist. He once told me that he was inspired by a desire to gain a deep understanding of the structure of the universe, but that during his work as a PhD student, he realized that achieving this goal was very far away. In the late 1970s, he therefore turned his interests toward inverse problems. The importance and philosophical implications of this field to physical sciences in general, and to geophysics in particular, appealed to Albert. The fundamental problem of consistent data analysis remained the most important challenge for him throughout his professional life.

Albert was a dedicated scientist and person. He always worked with great enthusiasm and joy, and as a scientist he was a veritable powerhouse. His intuition, insight and work ethic were unusual, even at a high scientific level. Scientific discussions Friday afternoon would typically result in dozens of densely written—and carefully typeset—pages Saturday afternoon, packed with a number of new ideas and thoughts.

Albert's scientific production was comprehensive and varied. He is famous for his development of probabilistic inverse theory, and for his important contributions to geophysical exploration through his work on seismic waveform inversion. But perhaps few people know that he was also enthusiastically engaged in, e.g., global navigation satellite systems, and in new formulations of fluid dynamics and elasticity theory. He worked intensively on these topics together with his many scientific contacts. The meetings took place in Paris (often at the Cafe Beaubourg near his home), or during his many visits at universities all over the world.

Albert was a scientist with a vision, and he had his own view of what was good science. In the latest version of his CV he wrote: "... I fell victim of the 'publish or perish' syndrome. I should not have published so many papers. The list that follows contains only the papers that history should retain." He knew very well that many internationally peer-reviewed publications are essential for success in the scientific community, but since the 1990s he dedicated his time only to scientific problems that he found important —irrespective of their suitability for scientific journals.

The most important guiding principles behind Albert's scientific work were consistency, symmetry and simplicity —something he probably brought with him from his early studies of general relativity and astrophysics. Albert possessed an ardent interest in nature, its structure and processes, but it was mathematics as a language to describe nature that really interested him. He insisted on mathematical beauty as a leading principle.

Albert was always warm and generous as a person, but he kept personal relations separate from professional discussions. It was quite possible for him to have animated discussions and strong scientific disagreements with close friends. The fact that Albert was serious about science probably scared some of those who did not know him well. Occasionally he had a fiery temper, and he expected scientific opponents to defend themselves. This was not easy for everyone to cope with, but Albert's commitment was an essential component of his professional life.

Albert had many interests besides science. One of his major passions was the study of the prehistory of mankind. On many journeys around the world, he and his wife Maria visited important archaeological sites, exploring the remains of ancient cultures. When Albert was invited as a speaker to scientific conferences, it was sometimes difficult to predict at

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what time, and from what direction, Albert and Maria would appear. More than often they combined scientific journeys with detours of archaeological or cultural character.

Every summer, Albert and Maria spent most of their time in the summerhouse in Isla Plana (in southern Spain). This beautiful spot, on the Mediterranean beach, occupied a special place in Albert's life. When Albert told me about Isla Plana, his eyes shone with happiness, and it was clear to me that the summer days in Isla Plana, with family and friends, belonged to his most precious moments. Albert and Maria both came from Spain, but early in their lives they went to Paris to seek their fortune. Isla Plana was the place that connected them to their origin.

Albert's books and papers will have lasting influence on the way coming generations will analyze scientific data. He died young, and certainly had much more to give to the scientific community. His family, and all of us who worked with him over the years, will greatly miss his good mood, his sharp intellect, his tireless commitment and warm personality.

—*Klaus Mosegaard*