

Meeting Jürgen Moser

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I met Jürgen Moser in 1981 at the *Scuola Normale Superiore* in Pisa during a conference. At that time I was finishing my Master thesis under the direction of Giovanni Gallavotti on KAM (Kolmogorov–Arnold–Moser) theory. In particular, we were proving a theorem concerning the Whitney smoothness of families of Lagrangian tori for general real-analytic, nearly-integrable Hamiltonian systems, and we wanted to inform Moser of our result. At those times e-mail did not exist, so I brought with me a typewritten letter at the Pisa’s conference and, shyly, handed it out to a very busy Moser, who barely looked at me. It turned out, instead, that he was very interested in the result. Indeed, Jürgen Pöschel — who, at that time, was a Ph.D. student of Moser — was working on integrability on Cantor sets of nearly-integrable smooth Hamiltonian systems and using, also, Whitney differentiability. Towards the end of the Pisa conference, after one of the last talks, Moser, who was sitting in the first row, turned back and whispered “Gallavotti” (who was not present at the conference). I figured out what was going on: He could not remember my face nor knew how to pronounce my difficult family name — a quite common fact — and, not liking to make mistakes, he used the most recognizable “key word” to catch my attention. So, I stood up and introduced myself. Moser asked me to follow *them* upstairs. “Them” were Moser and Ennio De Giorgi, whom also I hadn’t met before. While we were climbing the stairs of the beautiful *Palazzo della Carovana*, Moser asked De Giorgi information, in English, about the tapestry on the wall and kindly asked me to act as an interpreter, as De Giorgi did not speak English. I was flattered that these two great men needed my help to communicate... even if the communication regarded tapestries rather than mathematics!

Later, I had many occasions to talk about mathematics with Jürgen Moser, particularly during my visit, as a Post Doc, to the Forschungsinstitut für Mathematik at the ETH in Zürich, that he directed from 1980 till his retirement. It was immediately clear to me that Moser, besides being a very kind person, strongly enjoyed discussing mathematical problems with young people guiding them towards solutions. He was always very patient and adapted his mathematical language to your level. I remember once not agreeing with him about some problem (I think it was something about the structure of Lindstedt series). After a few minutes spent trying to convince me, Moser cut it short saying, with a smile, “At this point we should make a bet!”

Youngsters tend to be reckless but still I did not feel confident enough to make a bet on matter related to KAM theory with Moser. So, asking for some more time to think things over, I sneaked out of the discussion. Incidentally, as I do not remember exactly how the discussion ended (nor, exactly, what the question was), I do tend to think that Moser was right...

Often great mathematicians are not easy to follow, as they tend to lay out the “Big Picture”, which usually is so hard to grasp. Moser, of course, could do that, but, in fact, he preferred to actually help on technical matters. For example, once (during that same visit at ETH) I got stuck on some function theoretical lemma concerning weighted estimates for analytic functions and I brought the problem to Moser’s attention. It must have been pretty late since Liselotte Karrer — the wonderful FIM secretary of those times — was not around. That night, after dinner, I got a phone call at my apartment: it was Moser asking a few details on the question I mentioned to

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him that afternoon. The next morning, Moser came into my office with a handwritten proof of the lemma. I still treasure that piece of paper.

Moser was also a very practical man. Once, I was invited for dinner at the Mosers' house, which was outside Zürich, together with Sergiu Klainerman. At the end of the evening, Sergiu and I got in the car to get back to our places in Zürich, but took the wrong turn getting out of Moser's driveway. After a few minutes, in the middle of a soccer discussion, we heard a car honking insistently beyond us: It was Moser, who jumped into his car to reach us and to put us back on the right way!

Meeting Jürgen Moser has been an enormous honor, privilege and pleasure.