

Pavel Krejčí Laudatio (26. Juni 2014)

Mr. Chairman of the Science Council of the Czech Academy of Sciences, dear Director Rákosník, Ladies and Gentlemen, dear colleagues, my dear friend Pavel, dear Eva!

It is a big honor for me that I have been asked to hold a Laudatio for Pavel Krejčí on this occasion, when the Czech Academy of Sciences awards to him the Bernard Bolzano Honorary Medal for Merit in Mathematical Sciences. It is good to see that once in a while a person is honored that really deserves it, and I am delighted about that.

Let me give a very brief record of his scientific lifelines. Pavel Krejčí, who was born on June 21, 1954, in Děčín, near the German border, took his education from 1970 to 1973 at the Lycée Daudet, Nîmes, France, and from 1973 to 1978 at the Charles University in Prague.

After finishing his studies, he made a big step into real life by working for almost one year as a computer programmer for the Poldi Steel Company in Kladno, before he returned to science in July 1979 by becoming a Researcher at the Institute for Fluid Dynamics of the Czechoslovak Academy of Sciences. From December 1981 until December 1996, he worked here as a Researcher at the Institute for Mathematics.

During this period, he received his PhD in June 1984, so-to-speak, midway in his life, and we are also celebrating the 30th anniversary of his PhD in these days.

His outstanding scientific excellence was immediately recognized by the international community, and he was awarded the prestigious Alexander von Humboldt Fellowship of the German Humboldt Foundation. He also was invited to spent longer periods abroad at numerous institutions that cannot be named here.

From April to June 1996, he visited the Weierstrass Institute in Berlin, we began to cooperate, and we discussed the possibility for him to join WIAS. He then worked from 1997 to 2000 as a Researcher at WIAS, before returning to the Institute for Mathematics of CAS as the Head of the Department of Evolution Differential Equations. He held this position for three years. During this period, he received the Research Award 2001 of the Minister of Education of the Czech Republic.

He then returned to WIAS from 2004 to 2009 to become the Deputy Head of a Research Group. In May 2009, he was appointed Director of the Institute of Mathematics of the CAS, and he served on this position until recently. Looking from the outside, and having for understandable reasons a certain tendency to appreciate the accomplishments of directors, I do not entertain any doubt that Pavel did a wonderful job indeed. The positive development of this institute in the last years is a truly outstanding piece of achievement. Today, the Institute for Mathematics of the Czech Academy of Sciences is an internationally highly recognized institution that enjoys a worldwide reputation. And, Mr. Chairman of the Science Council, please forgive me, when I dare say that funding this institute is a very smart way indeed to invest the tax payers' money in a profitable way!

Now let me come to the more scientific achievements of Pavel Krejčí. He has an impressive publication list with two books and 120 papers in refereed international journals and conference proceedings. Moreover, which is most unusual for a mathematician, he has been granted a patent by the German Patent and Trade Mark Office.

Pavel Krejčí made important contributions to variational inequalities, to phase transition models, and to rate-independent problems in general. But from the very beginning of his career, he established himself as one of the world leaders in the development and the application of the theory of hysteresis operators in science. Many fundamental concepts in hysteresis theory go back to him. For instance, back in the early eighties he made the fundamental discovery that a purely geometric property, namely that certain hysteresis nonlinearities exhibit

strictly convex hysteresis loops, implies a higher-order energy inequality. This energy inequality became the analytic foundation of many existence proofs in elastoplasticity. And it was an entirely unexpected surprise that shocks cannot form in 1D wave equations when the strain-stress relation has the form of a true hysteresis nonlinearity instead of a “normal” monotone function. Pavel Krejčí thus discovered and promoted the insight that the occurrence of hysteresis is not always an unwanted complication, but may act as a welcome stabilizing feature.

Later, in 1996, his outstanding monograph “Hysteresis, Convexity and Dissipation in Hyperbolic Equations”, was published, which was a landmark in the theory of hysteresis operators and has ever since been used by countless researchers in many fields of science.

There are further scientific surprises due to him. But time is pressing, and so I have to be brief.

Pavel Krejčí is an international person in the truest sense. Often, he can converse with his cooperators in their native languages. In addition to his truly remarkable French and German, he of course speaks English, and apparently has a good mastery of Italian and Russian. Since he also ought to be able to speak a quite decent Czech (which I cannot judge, unfortunately), he has all the necessary prerequisites to feel at home almost everywhere.

Pavel Krejčí has taken strong influence on the careers of numerous young researchers from different countries, both by giving advice and by cooperating with them directly. I only want to name Michela Eleuteri, Klaus Kuhnen, Matthias Liero, Dima Rachinskii, Elisabetta Rocca, and Ulisse Stefanelli. These younger colleagues have profited a lot from him, just like me and other seniors who had the privilege to experience his cooperation.

Let me add a few words on his personality. I spoke about this already on Tuesday, but it is an important part of his success and definitely worth repeating: sincerity, truthfulness, integrity, fairness, reliability, sense of responsibility, tolerance, courage and steadfastness, and, last but not least,

his wonderful sense of humor and self-mockery are parts of his character. No wonder that he is respected and liked everywhere.

So let me come to a conclusion: yes indeed, and beyond any doubt, Pavel Krejčí is worthy of this honor, and the Czech Academy of Sciences can only be congratulated for the wise decision to bestow on him the Bernard Bolzano Honorary Medal for Merit in Mathematical Sciences.