International Colloquium in Memory of Jindřich Nečas, March 28 - 29, 2003

The address delivered by Professor Ivan Netuka, Dean of the Faculty of Mathematics and Physics

Dear Dr. Nečasová, distinguished guests, dear colleagues, dear friends, ladies and gentlemen!

It is a great honor and privilege for me having an opportunity to welcome and to greet all of you on behalf of the Faculty of Mathematics and Physics on the occasion of the International Colloquium in Memory of Professor Jindřich Nečas, an outstanding mathematician and one of the most prominent members of our Faculty staff.

Extraordinary achievements of Professor Nečas found a deserved response in our country as well as abroad. He was honored by the Order of Merit of the Czech Republic, by the Presidential Research Professor at the Northern Illinois University and Doctor Honoris Causa at the Technical University of Dresden. For many years he was a member of the Scientific Council of our Faculty of Mathematics and Physics and in this capacity as well as by many other ways he had been influencing the life of the Faculty for decades.

Let me start with a few remarks of a personal nature, simply a few words on Professor Nečas, how I remember him.

During the fourth academic year of our study at the Faculty, it was in 1966, Jindřich Nečas started to deliver a course traditionally called Equations of Mathematical Physics. The Nečas course was obligatory for students of Mathematical Analysis while for Applied Mathematics students, which I then belonged to, a different classical course on PDE's was scheduled. In this period I used to hear about Jindřich Nečas from Sváťa Fučík, my schoolmate from the secondary school as well as from the Faculty. Many of you know that Sváťa became later on one of the most distinguished Nečas pupils. Needless to say that Sváťa was a brilliant student, nevertheless the Nečas course, as he openly admitted, was by no means an easy task for him. So it happened that Jindřich Nečas introduced to Charles University what is usually called the modern theory of PDE's. I hardly could be sure that before mid- sixties none of the Faculty members has ever heard mathematical terms like Sobolev spaces, weak solutions, variational formulation, regularity or functional analytical approach. However, what is definitely true, is that it was Jindřich Nečas who was the very first one bringing these subjects to the Faculty as a discipline. At those days he had already been a man with international reputation in the field. From the point of view of the development of the Czechoslovak mathematics this is very remarkable, because PDE's had no tradition at all in our country before fifties.

So Jindřich Nečas - teacher entered our Faculty as a successful renowned scientist, the author of the monograph *Les méthodes directes en théorie des équations elliptiques*. It is generally regretted that this book having a tremendous impact on the development of the field has never been translated into English. However, one can look at the matter the other way round: the importance of this treatise as a reference book motivated or even forced many mathematicians to read French written mathematical texts.

During the period I am talking about, Jindřich Nečas worked at the Mathematical Institute of Czech Academy of Sciences and his activities there will be described by my colleague Karel Segeth, the Director of the Institute, in the next speech.

Even though I personally did not directly belong to Nečas' group, I dare to express several statements on where, in my eyes, the significance of Jindřich Nečas personality lies. Before, let me mention by passing that I had a pleasure to meet Jindřich Nečas mathematically for the first time at the beginning of seventies when he was appointed to be the reviewer of my PhD thesis. By the way, a couple of years later the situation repeated with the DSc dissertation. Since seventies, we were used to meet each other at various conferences, seminars, discussions and finally our trajectories intersected at the Mathematical Institute of Charles University in 1986.

Let me summarize where I find the main points of Jindřich Nečas brilliant career as a scholar and a university teacher.

For four decades Jindřich Nečas had been enriching the Czechoslovak and the world mathematics by original ideas, he has ever promoted new directions of research. Jindřich Nečas had a broad understanding of mathematics. His knowledge was vast and deep. He had always been eager to learn new pieces of mathematics. Even though his main achievements belong perhaps to the realm of hard analysis, soft analysis and, more generally, abstract mathematics interested him very much. On the other hand, he has never fallen into fascination by the mathematical beauty for itself, he had never did mathematics as a *l'art pour l'art* just for the entertainment.

Jindřich Nečas possessed a fine taste for what is called relevance in mathematics. He had a special talent of choosing important subjects for his own research as well as for that of his students and colleagues. It was fortunate for the whole Czechoslovak mathematical community that since sixties until recently, Professor Nečas had an opportunity to cultivate extensive international contacts. He spent more than a dozen of longer stays, mainly as a visiting professor, at various places: in Italy, France, Soviet Union, both Germanies and the United States of America. So he perfectly knew the state-of-the-art and therefore his results were always up to date.

By his qualities and charming personality, Jindřich Nečas was very successful in the creation of a large school consisting of young people and colleagues. Surely, his circle of ideas was seducing. By the way, under his direction, more than twenty five mathematicians completed their PhD theses. Nowadays, several of them are professors with reputation on an international scale. It is also worth of emphasizing that Professor Nečas had shown a constant interest in applications of mathematics and his understanding of physical and engineering problems was extraordinary. Such a "multidimensionality" naturally attracted not only mathematicians but also engineers, physicists and people from institutions directed to applied research.

As a representative of the Faculty, I surely have to mention Nečas activity in attempts to improve the university mathematics education. We owe him the creation of the study specialization called the Mathematical and Computer Modeling in Physics and Technology.

However, I wish also to point out several nonmathematical features of Jindřich Nečas personality. I remember him as an active, involved person, a good organizer, a man extremely devoted to his whole life love affair with mathematics, a person very sociable, open and ready to express his points of view, also a man with a sense of humor, laughing if a good joke was around. Simply in many respects, Jindřich Nečas was an exceptional man.

I use this opportunity to quote a few lines from a letter, which Professor Karel Rektorys sent to me a few days ago. He regrets that his health state does not allow him to attend this colloquium and his words on Jindřich Nečas read as follows: *I have highly esteemed him not only as a great mathematician but also as my best friend. His extraordinary overview in mathematics but also in other disciplines and simultaneously his straightforward and open character were a permanent source of admiration from the part of all of us. I am very, very sad whenever I realize that he is no longer among us.*
Let me say in conclusion that I am fully aware of the fact that this talk did not reserve space enough to Nečas mathematical achievements. This is right, I could have had talked about the boundary and initial value problems, non-linear spectral theory, on results concerning regularity of solutions and Liouville's type theorems, on mechanics of continuum, on the theory of elasto-plastic bodies or on transonic flow including the method of entropic compactification and the viscosity method.

Several of these topics will be covered by speakers of this colloquium. From them you surely will hear on Jindřich Nečas, maybe in other words, what I tried to express: we were very lucky here at the Faculty of Mathematics and Physics to have such a colleague in our circle. By his ideas and results and also through his pupils and colleagues, his legacy will be with us alive for many, many years to come.

Thank you very much for your attention.