

## Laudatio

Dear Horst, dear Ladies and Gentlemen,

it is my pleasure to tell you about the excellent scientific work of Horst and about his marvelous contributions to our society.

Let me start with his scientific contribution.

Horst received his diploma in Mathematics 1977 in Cologne and his PhD only three years later. His doctorfather is Rainer E. Burkard. After some time in Florida and Graz, Horst moved to the Technical University of Kaiserslautern where he has stayed until now although he had several attractive offers from other universities. He has also frequently been seen in New Zealand. The reason for his many stays there is that Horst is a Julius-von-Haas Fellow. He received this award from the New Zealand Government as an outstanding German researcher.

What are Horst's main scientific contributions?

He started with a theoretical work on flows in regular matroids where he was able to generalize cuts to signed co-circuits. He also improved ranking algorithms and used them within multi-objective optimization and for finding K-best solutions, currently in the context of robust optimization. Horst did a lot of work in location theory. His classification scheme and the library of location algorithms structured an up to this time unsorted mass of problem variations. His idea of using level sets gave an often used geometric point of view. Horst also integrated location theory with other problems such as flow problems and scheduling. He wrote and edited two well-known and highly recommendable books on location theory. Radiotherapy for cancer treatment is extremely relevant for our society. Horst contributed here with a formulation as flow problem and with a suggestion for representing Pareto solutions.

Finally, Horst is well-known as expert in evacuation planning. Based on flows, he already started with evacuation for hurricane events in Florida. Today, he works on the evacuation of soccer arenas, flooded regions, and in case of industrial accidents. And he integrates evacuation planning with optimizing the logistics needed afterwards.

Summarizing, Horst combined theory and practice of Operations Research in an excellent way, worked a lot on integrated problems and could also rely on his deep understanding of flows. This is also reflected in his talk tomorrow with the title: Network flows and variation: Old love never dies. The importance of Horst's research is also shown by his incredible many projects for which he received funding, for example by DFG, EU, BMBF, or Deutsche Krebsstiftung.

Let me continue with Horst's contribution to our society.

Horst is a great teacher who had uncountably many diploma, master- and bachelor students. Moreover, he is the doctorfather of 25 PhD students up to know. Five of his doctor-children already became professors themselves and are spreading Horst's ideas and approaches to a next generation.

Horst also had innovative ideas in teaching. He successfully introduced interdisciplinary and project-oriented courses, spread Operations Research to schools and had the idea of writing a bilingual optimization book that many of you know. He also received third-party funding for several teaching projects.

I want to mention two more remarkable contributions of Horst to Operations Research. First, Horst helped building up the ITWM, the first Fraunhofer Institute for Mathematics, and during this process made sure that Operations Research was successfully implemented in the Fraunhofer Community. Second, Horst always supported the German Society for Operations Research (GOR), in particular during his time as president in 2009/10.

Finally, Horst is a great person. He always cares for his students and doctorchildren, and he is a helpful, reliable and fair colleague. It is a pleasure to work with him! Horst has many interests, likes music, likes Köln, Kölsch and Karneval, and has a great family. I want to congratulate you, Horst, and your family for receiving this award and I wish you all the best for your future!