

## Thomas Pruschke [Obituary]

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# Thomas Pruschke

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Prof. Dr. Thomas Pruschke of the University of Göttingen, Germany, died of cancer on January 12, 2016. He was 56 years old. Thomas is best known for his important contributions to the theory of strongly correlated electron systems, such as heavy-fermions and high-temperature superconductors.

Thomas was born in Berlin, Germany, on April 23 1959, grew up in Rüsselsheim and enrolled at the Technical University Darmstadt to study physics. After receiving his M.Sc. in 1985, he pursued his PhD degree under the supervision of Norbert Grewe. His thesis, „Single-particle properties in models for highly correlated electron systems“, covered aspects of heavy-fermions and the Mott-Hubbard metal-insulator transition. Thomas received his doctoral degree in 1989.

Funding by the Japan Society for the Promotion of Science (JSPS) allowed Thomas to further his career by working with Hiroyuki Shiba at the Tokyo Institute of Technology, Japan. After having lived and worked in Japan for two years, Thomas took a postdoctoral position with Daniel Cox at the Ohio State University, Columbus, OH during 1992 to 1993, where he published his first papers together with Mark Jarrell on the Hubbard model in infinite spatial dimensions. This new approach allowed Thomas and his colleagues to successfully explain the unusual transport properties of high-temperatures superconductors in the normal phase.

Returning to Germany, Thomas joined the group of Joachim Keller at the University of Regensburg, where he worked on the emerging dynamical mean-field theory, and then, in 2001, took a tenured position in the group of Dieter Vollhardt at the University of Augsburg. Two years later, Thomas became a Professor in Computational Physics at the University of Göttingen, Germany. Thomas was active in teaching and research until the end of his life.

Thomas Pruschke was a remarkable person, with great humour, whose knowledge was often sought after by others, as can be seen in the numerous international collaborations he was involved in. Thomas was an inspiring scientist who combined a deep grasp of correlated materials with very powerful numerical skills in the quest for ways to explore new physics when a system could not be described by other means. He was co-author of several seminal and well-cited review articles in the area of strongly correlated electron systems, such as the first review of the Hubbard model in infinite spatial dimensions together with M. Jarrell and J.K. Freerick in 1995. In addition, he published two articles in Reviews of Modern Physics, one focusing on quantum cluster theories (2005) in collaboration with Th. Maier, M. Jarrell and M.H. Hettler, and one reviewing Wilson's numerical renormalization group approach to quantum impurity problems (2008), co-authored by R. Bulla and T. Costi. The latter two articles have become standard reviews on their subject. Thomas Pruschke is also the author of the book "Advanced Solid State Theory" (Morgan and Claypool Publishers, 2014), which grew out of his lectures on solid state physics at the University of Göttingen.

Indeed, Thomas was a highly dedicated academic teacher. He had an open-door policy and students could always approach him with their problems. The success of his students was as important to him as his own research. Even when he was already suffering from his severe illness, he took the time to interact and supervise his group and his students. As long as his health permitted, his hospital room became the center of his group.

Thomas loved to give lectures that were well received. He was the epitome of an academic scholar, living the unity of teaching and research. Thomas's natural curiosity became inflamed when he encountered physics blockades, and his enthusiasm inspired his students and his group

to explore the unknown and not to give up easily when encountering difficult questions.

Privately, Thomas was a passionate cook who loved to invite friends and members of his group home for dinner. His open approach with respect to his illness was admirable and left a deep impression on his colleagues and friends. Thomas liked to travel, was especially fascinated by the cultures of India and Japan, and was always open for new cultural stimulations. On the day of his funeral, a conference in India, which he had helped initiate and organize, was coming to a close.

He will be greatly missed as an exceptional human being, excellent scientist, and very good friend. Thomas Pruschke is survived by his wife, Anke, his daughter Mirjam and his son Jan-Erik.