Christof Eck
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Christian Rohde

Christof Eck studied mathematics at the Universities of Konstanz and Stuttgart. Then he joined the research group of Wolfgang Wendland in Stuttgart, where he received his doctoral degree in 1996 with a thesis on contact problems with friction. This topic from modern mechanics attracted him for his entire scientific life and he published more than fifteen papers on the subject in leading journals. He established as major contribution a rigorous existence theory of weak solutions by variational methods that could be applied to lots of applications. The analysis relies on regularization, a priori estimates for the approximate solutions and the use of the shift method on the boundary. A large part of this work has been done in a longstanding co-operation with colleagues from Prague, in particular with Jiri Jarusek. Together with Miroslav Krbec they authored also a monography on the mathematical theory of contact problems that sets standards in the field.

Leaving Stuttgart he acted from 1998 to 2007 as an assistant professor at the Friedrich-Alexander University of Erlangen-Nuremberg in the group of Peter Knabner. There he accomplished in 2004 his habilitation thesis on two-scale phase field models for dendritic growth. Phase field modelling, homogenization and the related asymptotic analysis became from then on his second major field of research. He was the first to develop and analyze rigorously multiscale settings which could be successfully applied to the description of dendritic growth, epitactic processes and dissolution/precipitation phenomena in porous media. His multiscale analysis not only paves the way to construct efficient and reliable numerical schemes but also found the interest of researchers from computational engineering. In particular with his co-

author Heike Emmerich he started a very fruitful interdisciplinary research on epitaxy. During his time in Erlangen Christof Eck became more and more involved in the mathematical education of students. Jointly with Harald Garcke and Peter Knabner he composed a book on mathematical modelling for undergraduate students. This monography (written in German) is by now the basics for many courses and seminars at German-speaking universities. It is that successful because it precisely fills a gap in teaching between the mathematical modelling issues which can be taught in lectures and those which are learned from practical computational studies.

In 2007 he was appointed Professor for Mathematics at the University of Bielefeld, But only one year later in 2008 he follows an offer of the University of Stuttgart as Professor for Numerical Mathematics. Here, he very quickly established a working group consisting of diploma and PhD students. He became fellow of the SimTech Cluster of Excellence at the University of Stuttgart where he substantially strengthens the cooperation between applied mathematics and the colleagues from the civil engineering departments.

His scientific contributions to the fields of contact mechanics and phase transition theory received worldwide appreciation. He was in the forefront of researchers on nonlinear contact problems in solid mechanics as well as on multi-scale modeling for dendritic growth and phase-field approximations for a wide range of applications. All of his work is characterized by outstanding mathematical depth as well as by interdisciplinary orientation. Christof Eck was hardworking, author of more than 50 research papers and two textbooks. He was a member in several research initiatives funded by the German Research Foundation. He had close scientific contacts to various research groups in Prague, Lyon, Pittsburgh, Madrid, Trento, and of course within Germany.

Christof Eck died on the 14th September 2011 after a long cancer disease.

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