21st Colloquium Lecture, School of Mathematics
Faculty of Mathematics and Physics

Klaus Böhmer

Philipps-University Marburg, Germany

May 12, 2016, 14:00, Lecture hall K3

Sokolovská 83, Praha 8 – Karlín

Math Goes Public:
Interesting Phenomena in Nonlinear Problems, Some Examples,e.g., Dew Drops on Spider Webs

Abstract

Math Goes Public lectures address a wide audience in natural and human sciences, and engineering: We try to show how mathematics can help to explain many different phenomena. Nonlinear problems are one of the most inspiring areas of modern Mathematics. They originate whenever different components of a system interact with each other. Most fascinating are unexpected scenarios of new critical solutions with new properties, e.g. the original symmetry or stability of the solution gets lost, so-called bifurcation and symmetry or stability breaking bifurcation appears. We will consider symmetry and structural consequences. Only lines of drops are observed along the spider thread. What are the reasons for that? The problem is so complicated that in its complexity it never had been studied before. In Marburg, together with Karlheinz Schild and Bernhard Schmitt we made it.

About the speaker

Klaus Böhmer, full, now retired Professor in Marburg, Germany, obtained Ph.D. and habilitation at the Technical University Karlsruhe. He has been concerned with general discretization theory, convergence results, defect corrections, asymptotic expansions, nonlinear problems, symmetries, bifurcations and center manifolds. He published about 90 papers and 5 books and was invited by Universities for research and has given circa 110 lectures in 12 countries. He has attended many conferences in Prague. Moreover, he has a long-term cooperation with colleagues from Charles University and from the University of Chemistry and Technology.

Further information
http://msekce.karlin.mff.cuni.cz/colloquia