

Mathematician Kang-Li Xu conducts research in Magdeburg supported by an Alexander von Humboldt Fellowship

30.01.2024 - The Chinese mathematician and systems science expert Dr. Kang-Li Xu has been awarded a research fellowship for doctoral researchers by the Alexander von Humboldt Foundation. She will spend a year conducting research at the Max Planck Institute for Dynamics of Complex Technical Systems in Magdeburg in the research group Computational Methods in Systems and Control Theory, where she is devoting herself to her special field of Riemannian optimization.

Dr. Kang-Li Xu has been working at the Max Planck Institute Magdeburg since December 1, 2023. Together with her host, CI member Prof. Dr. Peter Benner, she will work on Riemannian optimization model order reduction methods for nonlinear systems with polynomial or rational nonlinearities. Prof. Dr. Peter Benner is Director at the Max Planck Institute Magdeburg and Head of the Department of Numerical Methods in Systems and Control Theory. He welcomes Dr. Xu to the MPI-Magdeburg and emphasizes: "The selection process for the Humboldt research fellowships is highly competitive, so being awarded the fellowship is a special honor. We are looking forward to a fruitful collaboration."

Kang-Li Xu deals with methods for model reduction of parametric and non-linear systems. Simulations that represent the behavior of complex physical systems often require an unacceptable amount of time. The aim of model reduction is to simplify these large systems with much smaller models while retaining the essential physical properties. Using the techniques of Riemannian optimization, the specialty of Kang-Li Xu, one can obtain provably optimal reduced models for many classes of systems. The Riemannian optimization is applied to solve the mean-squared optimal model order reduction problem whose constraints can be characterized as a Riemannian manifold.

Kang-Li Xu was born in Qingdao, China, and completed her PhD at the College of Mathematics and Systems Science at Xinjiang University. Since 2018, she has held various positions at the School of Mathematics and Statistics at Xi'an Jiaotong University. Kang-Li Xu has already been awarded several research prizes.

Every year, the Alexander von Humboldt Foundation enables over 2,000 researchers from all over the world to spend academic residency in Germany.

> To the official press release of the Max Planck Institute for Dynamics of Complex Technical Systems Magdeburg
(<https://www.mpi-magdeburg.mpg.de/4484935/2024-01-30-humboldt-stipendiatin-mpi-magdeburg?c=3011>)

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