



PRESS RELEASE

Fascinated by symmetries - Anna Wienhard appointed director at the Max Planck Institute for Mathematics in the Sciences

Leipzig, November 2nd 2022

The Max Planck Institute for Mathematics in the Sciences in Leipzig welcomes mathematics professor Anna Wienhard as its new director. Her newly established research group focuses on fundamental research in the areas of geometry, group theory, and dynamics, and explores applications and interactions with other sciences. Anna Wienhard moves to Leipzig from Heidelberg University.

With Professor Anna Wienhard, the Max Planck Institute in Leipzig has gained an outstanding scientist who also cares deeply about the close connection between mathematics and other sciences as well as about science communication. "I strongly believe in the unity of mathematics, in the fruitful interplay between fundamental research in mathematics and the exploration of applications of mathematics in other sciences. The Max Planck Institute for Mathematics in the Sciences in Leipzig is an ideal place for me to pursue this. It is a place of deep and cutting-edge research in mathematics, and at the same time a place where mathematicians are open to interact with researchers from other sciences", Anna Wienhard is looking forward to her time in Leipzig.

Over the past years Anna Wienhard has played a key role in building up the highly interdisciplinary Cluster of Excellence STRUCTURES at Heidelberg. Although she describes herself as more of a theoretical mathematician, she sees great potential in connecting, even quite theoretical, mathematicians with scientists from other areas to explore applications of mathematical concepts beyond the well-known mathematical methods. She would like to expand this further in Leipzig.

In Anna Wienhard's research there is a strong connection to certain areas in physics, in particular the study of quantum field theories. "But I am not only exploring connections of my most current research in mathematics in the sciences. I am also interested in exploring where concepts from geometry and topology, which might be already well-established in these areas, can be used and applied in other areas", is how she outlines her research spectrum.

Symmetries play a key role in Anna Wienhard's work. She is interested in actions of groups of symmetries, as well as in spaces with very rich symmetry groups. Such symmetric spaces

generalize the well-known Euclidean spaces, and at the same time the perhaps less well-known hyperbolic spaces. They provide very rich geometries which are still computationally tractable. Anna Wienhard and her research team are using this rich geometry and some interesting features of symmetric spaces for graph representations and machine learning applications, for example.

In parallel to her passion for mathematics, science communication plays a major role for Anna Wienhard. She engages in numerous projects that both promote exchange among scientists and communicate the beauty of mathematics, generating interest in the field in society. In 2021 she founded HEGL, the Heidelberg Experimental Geometry Lab, which promotes mathematical research through collaborative experimentation and visualization.

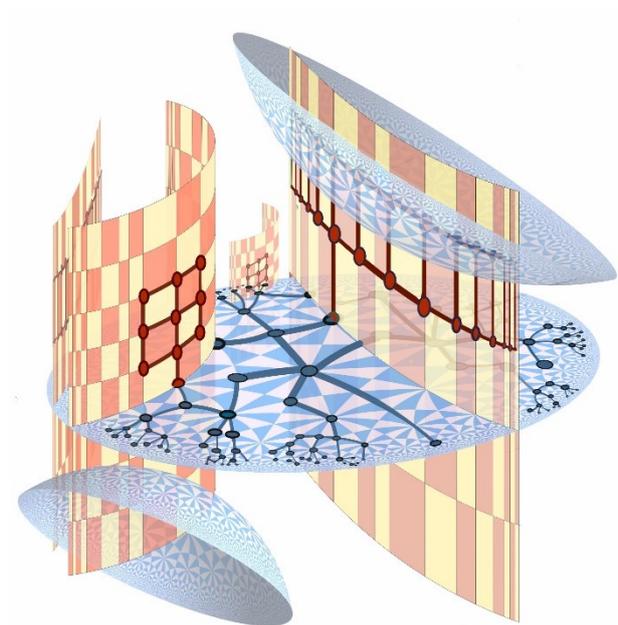
"Many people do not really know what mathematical research is about. They think of mathematics in terms of what they learned in school. But mathematics is so much more. For me mathematics is not about computations, but about finding structures, finding the right way to think about a problem, so that you will be able to solve it." Anna Wienhard would like to make this essence of mathematical thinking, which she considers not too difficult but very exciting, accessible to everyone. "In my opinion, we should try to give everyone the opportunity to see some of the beauty of mathematics. In the same way that I enjoy a musical concert even though I am not a musician, I hope to give people an opportunity to enjoy and experience some of the strange beauty of mathematics", summarizes Anna Wienhard.

Vita

Anna Wienhard, born in 1977 in Giessen, received her doctorate in 2004 under supervision of Hans Werner Ballmann at the Rheinische Friedrich-Wilhelms-Universität in Bonn. Already in 2005/2006 as well as from 2009 to 2012 she was invited to the Institute for Advanced Study in Princeton. From 2007 to 2012 she was Assistant Professor at Princeton University. Since 2012, Anna Wienhard holds the Chair of Differential Geometry at Ruprecht-Karls-University Heidelberg. She has also been an associate member of the Interdisciplinary Center for Scientific Computing since 2013 and a group leader at the Heidelberg Institute of Theoretical Studies since 2015. Since 2020, she has been the director of the "Research Station Geometry and Dynamics" at Heidelberg University. After another research stay at the Institute for Advanced Study in Princeton, she will move to the Max Planck Institute for Mathematics in the Sciences in Leipzig.

Anna Wienhard has received numerous honors and awards, including an Alfred P. Sloan Foundation Research Fellowship, an ERC Consolidator Grant, and an ERC Advanced Grant from the European Research Council. She is a Fellow of the American Mathematical Society and elected member of both the Heidelberg and Berlin-Brandenburg Academies of Science, as well as of the European Academy of Science. In addition, she is co-spokesperson of the Interdisciplinary Cluster of Excellence STRUCTURES, scientific chair of the Heidelberg Laureate Forum Foundation, member of the board of the Priority Programme "Geometry at Infinity" and of the Collaborative Research Center "Symplectic Structures in Geometry,

Algebra and Dynamics" of the German Research Foundation DFG and engages as advisor and speaker in other committees.



Graphs in symmetric space.

Information on the research group „Geometry, Groups, and Dynamics“ led by Prof. Dr. Anna Wienhard at the Max Planck Institute:

www.mis.mpg.de/geometry-groups-dynamics

Photo of Prof. Dr. Anna Wienhard

<https://oc.mis.mpg.de/s/KZhIbNECy6B9WFJ>

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Information about Prof. Dr. Anna Wienhard on the website of Heidelberg University

<https://www.mathi.uni-heidelberg.de/~wienhard/>

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