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Publication date:

2021-06

Permanent link:

<https://doi.org/10.3929/ethz-b-000494640>

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Originally published in:

Vietnam Journal of Mathematics 49(2), <https://doi.org/10.1007/s10013-021-00514-7>



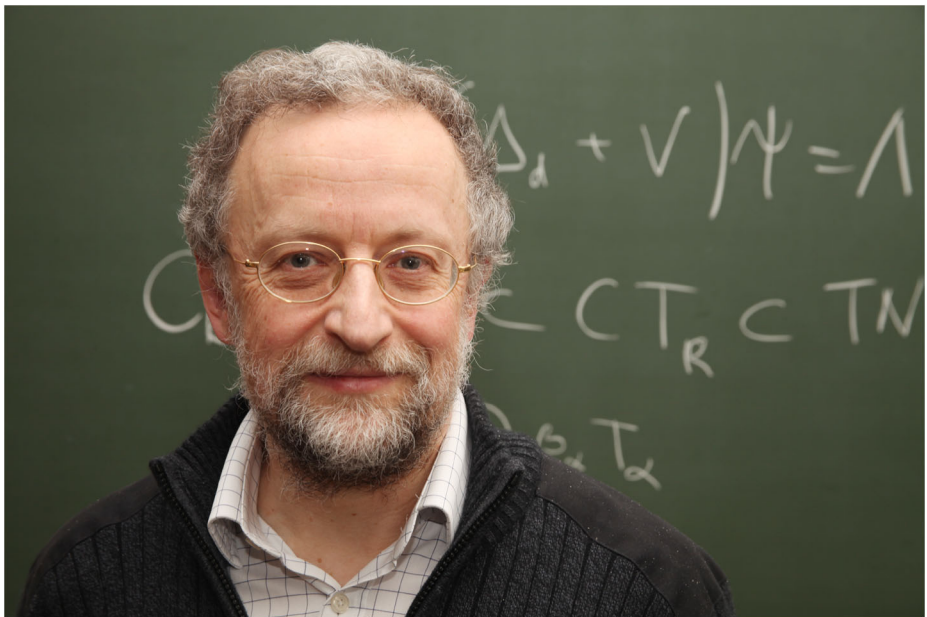
Preface

Special Issue Dedicated to Jürgen Jost's 65th Birthday

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Published online: 6 July 2021

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Jürgen Jost is a director of the Max Planck Institute for Mathematics in the Sciences in Leipzig which he co-founded in 1996, together with Eberhard Zeidler and Stefan Müller, and where he has been working for a quarter of a century by now. His influential work ranges from countless scientific contributions to the creation of a culture of interdisciplinary thinking in which concepts and abstract mathematical structures are identified as

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the core instrument for integrating knowledge across scientific disciplines. To acknowledge his achievements, the President of Vietnam Academy of Science and Technology signed a decision for awarding the degree of Doctor Honoris Causa to Jürgen Jost on June 13, 2019.

This Special Issue of the Vietnam Journal of Mathematics is dedicated to Jürgen Jost on the occasion of his 65th birthday. It comprises 18 articles, written by his friends, co-authors, and colleagues. Since the present journal is devoted to research in mathematics, these articles mainly address the mathematical interests of Jürgen Jost. We would like to thank warmly the authors and reviewers for their contributions.

Jürgen Jost began his studies in 1975 at the University of Bonn, with broad interest in mathematics, physics, economics, and philosophy. After his initial studies of these fields, he decided to continue his path in mathematics. Addressing a problem on harmonic maps, posed by Stefan Hildebrandt for his Diploma thesis, the results obtained by Jürgen Jost went far beyond the initial problem and were in quality and importance way above the threshold for a Diploma degree. This opened up the possibility of obtaining the PhD in mathematics very quickly. In 1980, at the age of 23, he finalised his PhD thesis entitled *Eineindeutigkeit harmonischer Abbildungen (Univalence of Harmonic Maps)*. This special issue is devoting quite a number of articles to the important field of harmonic maps.

In the following few years, Jürgen Jost had several stays abroad at worldwide highly recognised research institutions, in particular at the *Institute for Advanced Study* in Princeton, at the *University of California* in San Diego, and at the *Australian National University* in Canberra. During this time he published a number of other important works on harmonic maps and minimal surfaces. In 1984, at the age of 28, he became Full Professor for Mathematics at the Ruhr University Bochum. In the same year, he then completed his habilitation thesis entitled *Globale Variationsmethoden in der Theorie der harmonischen und konformen Abbildungen in zwei Dimensionen nebst Anwendungen auf Minimalflächen (Univerität Bonn, 1984; Global Variational Methods in the Theory of Harmonic and Conformal Maps in Two Dimensions and Applications to Minimal Surfaces)*.

During his time in Bochum, Jürgen Jost wrote a number of books, most notably his well-known and comprehensive Springer book *Riemannian Geometry and Geometric Analysis*. The seventh edition of this, by now classical, work was published in 2017. In 1993, Jürgen Jost received the Gottfried Wilhelm Leibniz Prize of the German Research Foundation for his outstanding achievements in mathematics.

After having reached and consolidated his high reputation as a mathematician, Jürgen Jost started to connect back to his interdisciplinary interests and developed an ambitious research agenda with which he moved to Leipzig in 1996, as one of the three founding directors of the Max Planck Institute for Mathematics in the Sciences. With his interdisciplinary profile, he has been also affiliated with the Santa Fe Institute, USA, since 2000 as an External Professor. His impressively broad interests cover, in particular, the following subjects and fields:

- Geometric Analysis
- Geometry and Mathematical Physics
- Dynamical and Stochastic Systems
- Cognition and Semantics
- Computational and Mathematical Neuroscience and Biology
- Strategy Science
- History and Philosophy of Science
- Metric Geometry, Graphs and Hypergraphs, Network Analysis, Category Theory
- Complex Systems and Information Theory

- Machine Learning and Data Analysis, with connections to Geometry
- Quantum Information Theory

In 2010, Jürgen Jost received an ERC Advanced Grant with which his research agenda was supported by the European Commission. More recently, in 2018, he was awarded the Science Prize of the Benedictus Gotthelf Teubner Foundation.

By now, Jürgen Jost has written more than 400 research articles and more than 20 books. He is editor of the Springer book series *Ergebnisse der Mathematik und ihrer Grenzgebiete* (Editor), *Wissenschaft und Philosophie – Science and Philosophy – Sciences et Philosophie* (Initiator and Co-Editor-in-Chief), *Klassische Texte der Wissenschaft* (Initiator and Co-Editor-in-Chief), and the English counterpart of the latter, the Birkhäuser book series *Classic Texts in the Sciences* (Initiator and Co-Editor-in-Chief). Most recently, Jürgen Jost initiated the new Springer book series *Mathematics of Data* for which he will be responsible as Editor-in-Chief. Furthermore, he has been serving as an editor of various journals, including *Theory in Biosciences* (Editor-in-Chief), *Journal of the European Mathematical Society* (first Editor-in-Chief), *Calculus of Variations and Partial Differential Equations* (Editor), *Information Geometry* (Associate Editor), *Mathematische Zeitschrift* (Editor), *Communications in Mathematics and Statistics* (Editor), *Applied Mathematics Research eXpress* (Editor), and *Vietnam Journal of Mathematics* (Editor). Jürgen Jost is a member of the *German National Academy of Sciences Leopoldina*, the *Academy of Sciences and Literature Mainz*, and the *Saxonian Academy of Sciences and Humanities*.

As an exceptionally gifted teacher, Jürgen Jost educated successfully more than 50 PhD students. At least 20 of them took professor positions, thereby extending his scientific path and vision all over the world. Furthermore, Jürgen Jost educated and mentored countless postdoctoral fellows, thereby guiding them into a successful scientific carrier. Often, this was the result of stimulating and fruitful collaborations with him that ultimately led to the consolidation of a new research direction.

Over the years, Jürgen Jost has shaped a new kind of interdisciplinary science, with mathematics at its heart, and deeply influenced future generations of scientists. We look forward to the continuation of his influential work and congratulate him on his 65th birthday.

Funding Open Access funding enabled and organized by Projekt DEAL.

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