



Preface

Guido Schneider¹

© Deutsche Mathematiker-Vereinigung and Springer-Verlag GmbH Deutschland, ein Teil von Springer Nature 2018

The present issue contains a long survey article about the numerical approximation of Magnetohydrodynamics which are the equations describing for instance the evolution of plasmas. Dominik Derigs, Gregor J. Gassner, Stefanie Walch, and Andrew R. Winters explain how to obtain a numerical approximation of the ideal MHD system that remains consistent to the continuous thermodynamic principles. After an overview of the continuous analysis, they thoroughly describe the derivation of an Entropy Stable Finite Volume Approximations and show its applicability to a variety of standard numerical test cases for MHD schemes. Such structure preserving numerical approximations play an increasingly important role.

The founding director of the Max Planck Institute for Mathematics in the Sciences in Leipzig, Eberhard Zeidler, passed away on Nov. 18, 2016 after a long illness. Jürgen Jost describes the main theme of his scientific life, namely a grand vision of the unity of mathematics and physics, towards which he worked with several series of impressive and encompassing monographs.

Finally, Slawomir Kolodziej reviews the book “Degenerate Complex Monge-Ampère Equations” by Vincent Guedj and Ahmed Zeriahi.

We hope that you enjoy reading this issue.

✉ G. Schneider
guido.schneider@mathematik.uni-stuttgart.de

¹ Institut für Analysis, Dynamik und Modellierung, Universität Stuttgart, Pfaffenwaldring 57, 70569, Stuttgart, Germany