Preface to Focused Section on Efficient High-Order Time Discretization Methods for Partial Differential Equations

Sebastiano Boscarino¹ · Giuseppe Izzo² · Lorenzo Pareschi³ · Giovanni Russo¹ · Chi-Wang Shu⁴

Published online: 2 September 2021
© Shanghai University 2021

During May 8–10, 2019, the International Workshop on Efficient High-Order Time Discretization Methods for Partial Differential Equations took place in Villa Orlandi, Anacapri, Italy, a Congress Center of the University of Naples Federico II. About 40 senior researchers, young scholars, and Ph.D. students attended this workshop. The purpose of this event was to explore recent trends and directions in the area of time discretization for the numerical solution of evolutionary partial differential equations with particular application to high-order methods for hyperbolic systems with source and advection-diffusion-reaction equations, and with special emphasis on efficient time-stepping methods such as implicit-explicit (IMEX), semi-implicit and strong stability preserving (SSP) time discretization. The present focused section entitled “Efficient High-Order Time Discretization Methods for Partial Differential Equations” in *Communications on Applied Mathematics and Computation* (CAMC) consists of five regularly reviewed manuscripts, which were selected from submissions of works presented during the workshop.

We thank all the authors of these contributions, and hope that the readers are interested in the topics, techniques and methods, and results of these papers. We also want to thank the CAMC journal editorial staff as well as all the referees for their contributions during the review and publication processes of this focused section.

✉ Giuseppe Izzo
giuseppe.izzo@unina.it

Sebastiano Boscarino
sebastiano.boscarino@unict.it

Lorenzo Pareschi
lorenzo.pareschi@unife.it

Giovanni Russo
giovanni.russo1@unict.it

Chi-Wang Shu
chi-wang_shu@brown.edu

¹ Università degli Studi di Catania, 95131 Catania, Italy

² Università degli Studi di Napoli Federico II, 80126 Naples, Italy

³ Università degli Studi di Ferrara, 44121 Ferrara, Italy

⁴ Brown University, Providence, RI 02912, USA