13th Workshop on Parallel Programming and Run-Time Management Techniques for Many-Core Architectures

11th Workshop on Design Tools and Architectures for Multicore Embedded Computing Platforms

PARMA-DITAM 2022, June 22, 2022, Budapest, Hungary

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Preface

This volume collects the proceedings of the PARMA-DITAM workshop 2022. PARMA-DITAM brings together the decade-long experience of two workshops: the workshop on Parallel Programming and Run-Time Management Techniques for Many-core Architectures (PARMA) and the workshop on Design Tools and Architectures for Multicore Embedded Computing Platforms (DITAM). These events first joined in 2014 and since then, they represent a reference point in the European community of high-performance computer architectures, embedded systems and compiler technologies. PARMA-DITAM is co-located with and sponsored by the HiPEAC conference, which annually gathers the most excellent researchers on High Performance Embedded Architectures and Compilers within the European borders and beyond.

The PARMA-DITAM 2022 workshop focuses on many-core architectures, parallel programming models, design space exploration, tools and run-time management techniques to exploit the features and boost the performance of such – possibly heterogeneous, (re-)programmable and/or (re-)configurable – many-core processor architectures from embedded to high performance computing platforms and cyber physical systems.

This edition features 5 regular papers carefully selected among 9 submissions by our expert Technical Program Committee after a double-blind review process. The editors are proud to present, in the early pages of this volume, 2 additional manuscripts from selected research groups who agreed to share their latest achievements in invited talks during the workshop event.

This edition of the PARMA-DITAM workshop focused on seven main topics:

- Parallel programming models and languages, compilers and virtualization techniques
- Runtime modelling, monitoring, adaptivity, and management
- Runtime trade-off execution, power management, and memory management
- Heterogeneous and reconfigurable many-core: architectures and design space exploration
- Methodologies, design tools, and high level synthesis for many-core architectures
- Parallel applications for many-core platforms
- Case studies, success stories and applications applying T1-T6

The editors invite researchers to join in the discussion during the PARMA-DITAM event on June 22, 2022 and to submit their future works for consideration in the next editions of this workshop.

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