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Isolde Adler · Haiko Müller (Eds.)

Graph-Theoretic Concepts in Computer Science

46th International Workshop, WG 2020

Leeds, UK, June 24–26, 2020

Revised Selected Papers



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Preface

This volume contains the 32 papers presented at the 46th International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2020). The workshop was held online during June 24–26, 2020, after the original plans to organise it in Leeds, UK, had to be abandoned due to COVID-19. Over 200 computer scientists and mathematicians from all over the world registered for the conference, although most talks were attended by 65–75 participants.

WG has a long-standing tradition. Since 1975, WG took place 24 times in Germany, 5 times in The Netherlands, 3 times in France, 2 times in Austria, 2 times in the Czech Republic, as well as in Greece, Israel, Italy, Norway, Slovakia, Spain, Switzerland, and Turkey one time each. This was the second time the workshop was organised in the UK.

WG aims to merge theory and practice by demonstrating how concepts from Graph Theory can be applied to various areas in Computer Science, or by extracting new graph theoretic problems from applications. The goal is to present emerging research results and to identify and explore directions of future research. The conference is well-balanced with respect to established researchers and junior scientists.

We received 96 submissions, 2 of which were withdrawn before entering the review process. The Program Committee (PC) provided 3 to 5 independent reviews for each submission. The PC accepted 32 papers – an acceptance ratio of nearly 1/3. As in previous years, due to strong competition and limited space there were papers that were not accepted although they deserved to be.

The prize for the Best Paper at WG 2020 was awarded to Jesper Nederlof, Michał Pilipczuk, Céline Swennenhuis, and Karol Węgrzycki for their paper “Hamiltonian cycle parameterized by treedepth in single exponential time and polynomial space.” The prize for the Best Student Paper at WG 2020 was awarded to Sriram Bhyravarapu for his paper “Combinatorial bounds for conflict-free coloring on open neighborhoods,” coauthored by Subrahmanyam Kalyanasundaram. The program included two inspiring invited talks, by Mihyun Kang (TU Graz, Austria) on “Topological aspects of random graphs” and by Jaroslav Nešetřil (Charles University, Prague) on “Three aspects of structural graph theory.”

Moreover, many individuals contributed to the success of WG 2020. In particular our thanks go to:

- All authors who submitted their newest research results to WG
- The reviewers whose expertise supported the selection process
- The members of the PC, who graciously gave their time and energy
- The members of the Organizing Committee at the University of Leeds, UK
- The School of Computing at the University of Leeds, UK
- The EasyChair system for hosting the evaluation process

- Springer for supporting the Best Paper Awards
- The invited speakers, all speakers, the session chairs, and the participants for their contributions and support to make WG 2020 an inspiring event

July 2020

Isolde Adler
Haiko Müller

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 WG 1976
 WG 1977
 WG 1978

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 H. Noltemeier – Göttingen, Germany
 J. Mühlbacher – Linz, Austria
 M. Nagl, H. J. Schneider – Burg Feuerstein near
 Erlangen, Germany

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WG 2001	A. Brandstädt, Boltenhagen near Rostock, Germany
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WG 2004	J. Hromkovič, M. Nagl – Bad Honnef, Germany
WG 2005	D. Kratsch – Île du Saulcy, Metz, France
WG 2006	F. V. Fomin – Sotra near Bergen, Norway
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WG 2008	H. Broersma, T. Erlebach – Durham, UK
WG 2009	C. Paul, M. Habib – Montpellier, France
WG 2010	D. M. Thilikos – Zarós, Crete, Greece

WG 2011	J. Kratochvíl – Teplá Monastery, West Bohemia, Czech Republic
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WG 2018	A. Brandstädt, E. Köhler, K. Meer – Lübbenau near Cottbus, Germany
WG 2019	I. Sau, D. M. Thilikos – Vall de Núria, Catalunya, Spain
WG 2020	I. Adler, H. Müller – Leeds, UK

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