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Biological Processes & Petri Nets

4th International Workshop BioPPN 2013
Milano, 24 June 2013
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Preface

These proceedings contain the six peer-reviewed contributions as well as the abstract of one complementary accepted presentation of the Fourth International Workshop on Biological Processes & Petri Nets (BioPPN 2013), held as a satellite event of PETRI NETS 2013, in Milano, Italy, on Monday, June 24, 2013.

The workshop has been organised to provide a platform for researchers aiming at fundamental research and real life applications of Petri nets in Systems and Synthetic Biology. Systems and Synthetic Biology are full of challenges and open issues, with adequate modelling and analysis techniques being one of them. The need for appropriate mathematical and computational modelling tools is widely acknowledged.

Petri nets offer a family of related models, which can be used as a kind of umbrella formalism – models may share the network structure, but vary in their kinetic details (quantitative information). This undoubtedly contributes to bridging the gap between different formalisms, and helps to unify diversity. Thus, Petri nets have proved their usefulness for the modelling, analysis, and simulation of a diversity of biological networks, covering qualitative, stochastic, continuous and hybrid models. The deployment of Petri nets to study biological applications has not only generated original models, but has also motivated research of formal foundations.

We received two types of contributions: research papers and work-in-progress papers. All submissions have been reviewed by four to six reviewers coming from or being recommended by the workshop's Program Committee. The list of reviewers comprises 20 professionals of the field, writing in total 37 reviews. The six accepted peer-reviewed papers (with an acceptance rate of 75%) involve 25 authors coming from 6 different countries. In summary, the workshop proceedings enclose theoretical contributions as well as biological applications, demonstrating the interdisciplinary nature of the topic.

The workshop programme was complemented by the invited talk *'Dreaming about models: a biologist's perspective'* given by Raffaele Calogero from the Medical School of the University of Torino, Italy.

For more details see the workshop's website http://www-dssz.informatik.tu-cottbus.de/BME/BioPPN2013.

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June, 2013

Gianfranco Balbo
Monika Heiner

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