



2nd TERANET 2011 International Workshop

Toward Evolutive Routing Algorithms for scale-free/Internet-like NETWORKS

Rome, Italy - September 19, 2011

Collocated with the 25th International Symposium on DISTRIBUTED Computing (DISC 2011)
<http://disc2011.dis.uniroma1.it/>

Description: The Internet routing system is facing performance challenges in terms of scalability (growth rate of the Border Gateway Protocol – BGP– routing tables) and in terms of dynamics of the routing information exchanges (convergence, and stability/robustness) that result into major cost concerns for network designers but also protocol designers. There is a growing consensus among the scientific and technical community that the current practice of "patching" the forwarding and BGP routing protocol of the Internet will not be able to sustain its continuous growth at an acceptable cost and speed. On the other hand, the Internet size and scope make the deployment of new routing scheme(s) extremely challenging. Recent advances in routing algorithmics take benefit of the statistical and structural properties of the Internet topology and better characterization of its dynamics. The research domain dedicated to **new routing paradigms** aims to design distributed routing schemes that are specialized for the Internet while taking into account its dynamics and its continuous evolution.

The TERANET international workshop focuses on current research and related challenges on new routing paradigms for distributed and dynamic routing schemes applicable to the Internet and its evolution. The goals of this workshop are i) to **stimulate research** in the interdisciplinary area that lies at the intersection of Graph Theory, Distributed Routing Algorithmic and Network Dynamics Modeling, and ii) to provide a forum for **active discussions** among speakers and participants.

The TERANET International Workshop is organized by the **EULER research project** (<http://www.euler-fire-project.eu>), a 3-year STREP part of the Future Internet Research and Experimentation (FIRE) initiative, funded by the EU Seventh Framework Programme (FP7).

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WORKSHOP PROGRAM

09:00 Introduction by Workshop Chairs

09:15 Session 1: **Network dynamics modeling**

Complex networks dynamics modelling-Entropy of network ensembles

Ginestra Bianconi (Northeastern Univ., Boston –MA–, USA)

Optimization-driven evolution of networks

Sergey Dorogovtsev (Univ. of Aveiro, Portugal; Ioffe Institute, Russia)

The hidden hyperbolic structure of the Internet

Marián Boguñá (Univ. of Barcelona, Barcelona, Spain)

12:45 Lunch Break

14:15 Session 2: **Distributed routing schemes & algorithmics**

Greedy forwarding in the Internet using its metric structure

Fragkiskos Papadopoulos (Cyprus Univ. of Technology, Lemesos, Cyprus)

Decentralized routing in small worlds

Nicolas Schabanel (LIAFA Univ. Paris Diderot - Paris VII and Centre National de la Recherche Scientifique –CNRS–, Paris, France)

A survey on distance oracles

Liam Roditty (Bar-Ilan University, Ramat-Gan, Israel)

17:45 Concluding talk

18:00 End of the Workshop

REGISTRATION

Attendees must follow the DISC 2011 registration guidelines available at http://disc2011.dis.uniroma1.it/registration_disc_2011.php. The workshop registration fee (100€ after August 31st) includes participation, proceedings (workshop booklet), lunch and coffee breaks. Presentation material will be made available to attendees.

VENUE

Dipartimento di Informatica e Sistemistica, Sapienza Università di Roma. Via Ariosto 25, Roma, Italy.

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