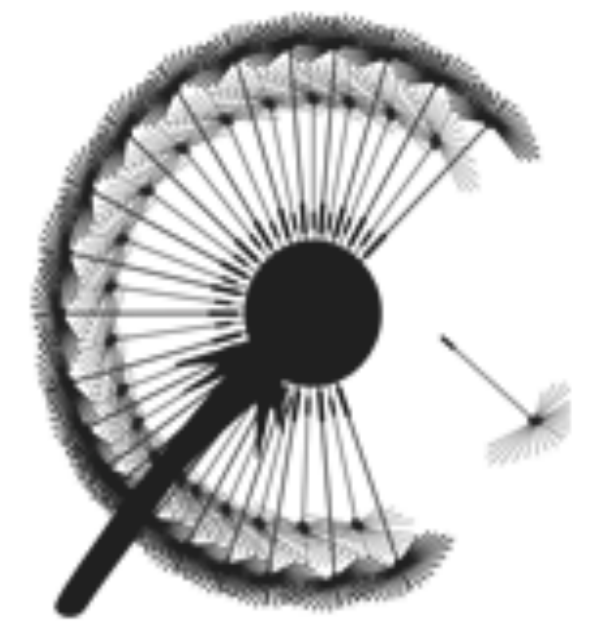


# On the Dynamics of Routing Trees from an Ego-centered point of view

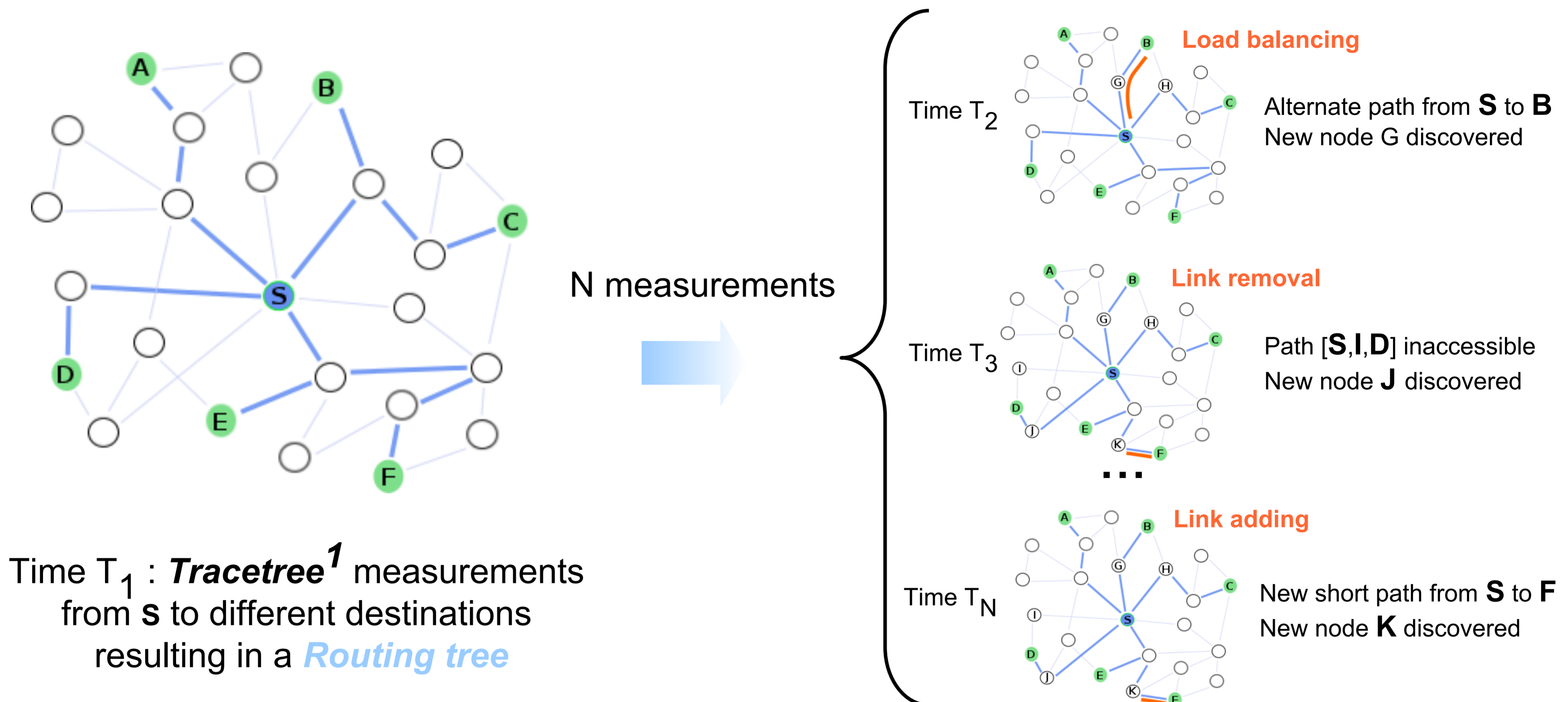


Medem Amélie, Fabien Tarissan, Clémence Magnien and Matthieu Latapy

{amelie.medem, fabien.tarissan, clemence.magnien, matthieu.latapy}@lip6.fr

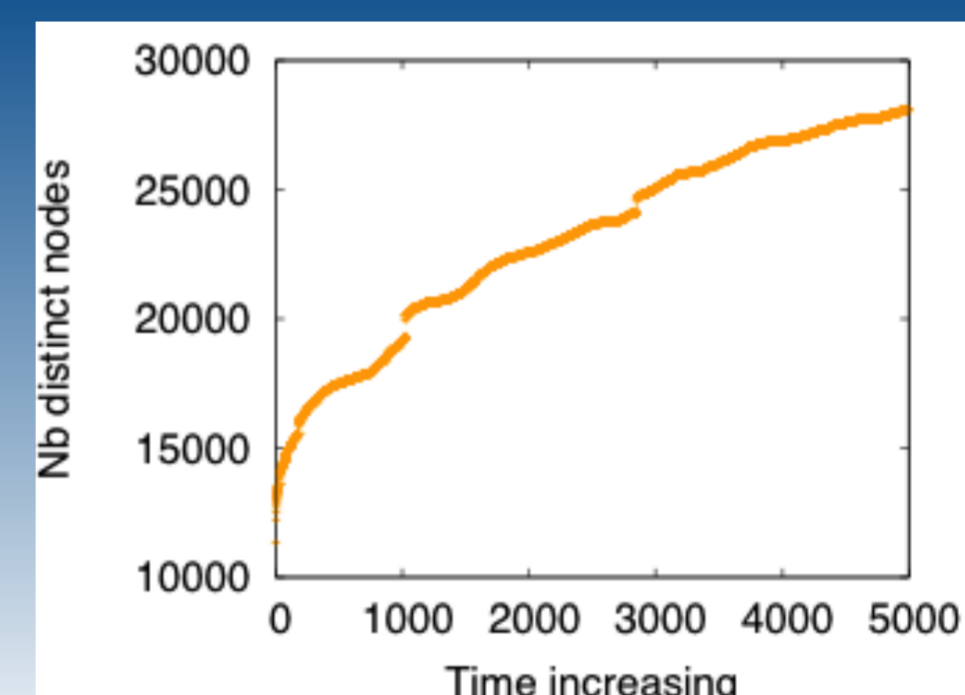
ComplexNetworks

## How the network evolves around a node in the Internet ?



## Dynamics observed on real Internet<sup>2</sup>

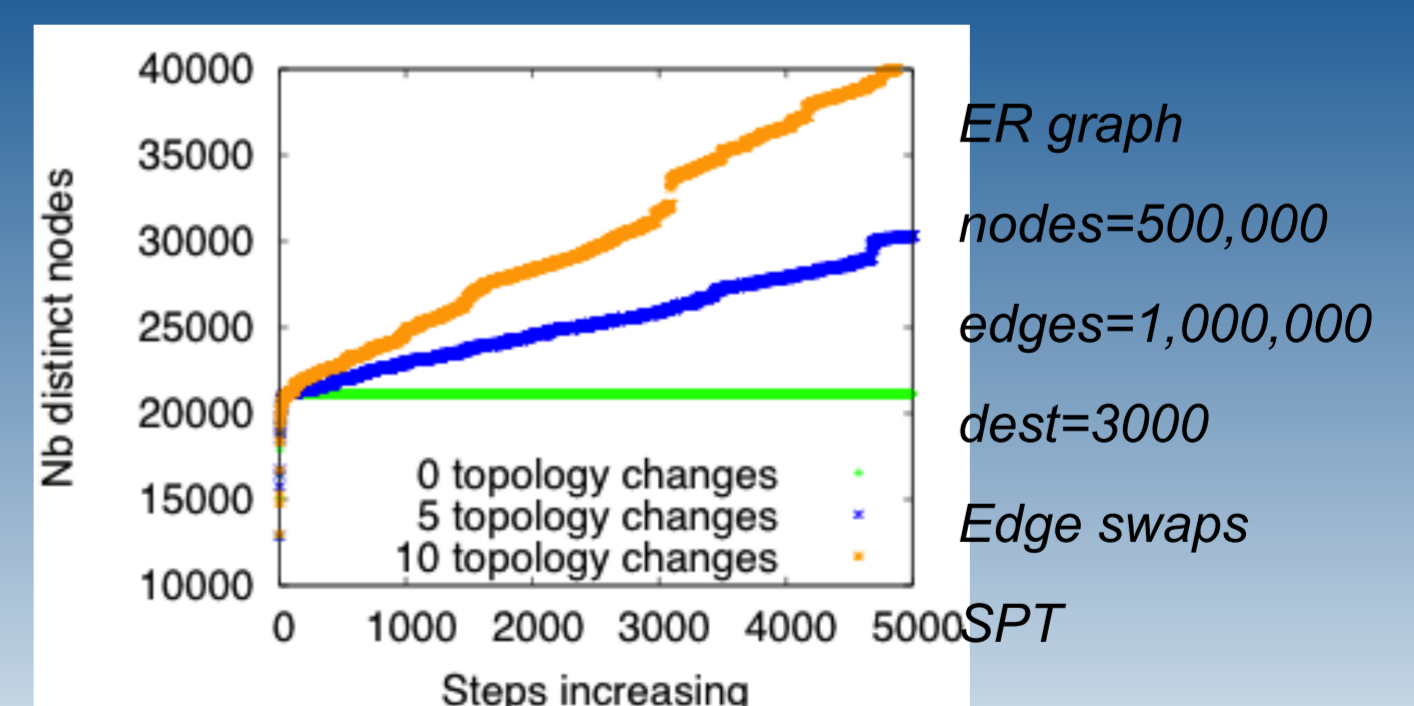
- Stability of the number of IP nodes discovered around a node
- Constant discovering of new IP nodes over time
- *Etc ...*



## Simulation

- Step 1 : Topology model
  - ✓ Erdős-Rényi (ER), Power law, Configuration models
- Step 2 : Model of the dynamics
  - ✓ Edge or node removal/adding/rewiring (edge swaps)
- Step 3 : Routing model
  - ✓ Shortest Path (SPT)

## Dynamics explained



*The more the topology changes, the faster the discovery of new nodes*

<sup>1</sup> M. Latapy, C. Magnien and F. Ouédraogo. A radar for the internet. In Proc. Analysis of Dynamic Networks (ADN), with IEEE ICDM 2008.

<sup>2</sup> C. Magnien, F. Ouédraogo, G. Valadon, and M. Latapy. Fast dynamics in internet topology: Observations and first explanations. In Proc. International Conference on Internet Monitoring and Protection (ICIMP), IEEE Computer Society, 2009.