



**Mês de: Abril 2010**

## **BIOMATEMÁTICA**

**Dia 20 de Abril (terça-feira), às 16h, na Sala B3-01**

“Deriving Steady-State Degree Distributions of  
an Adaptive Network through a Single-Node Model”

***Stefan Wieland***

(Univ. Lisboa)

### **Abstract:**

Disease awareness in epidemiology can be modelled with adaptive contact networks, where the interplay of disease dynamics and network alteration often adds new phases to the standard models (Gross, 2006) and, in stochastic simulations, lets network topology settle down to a steady state that can be static (frozen phase) or dynamic (active phase). In Gross' SIS model featuring a rewiring of links as the topology-changing mechanism, the steady state in the active phase does not depend on the initial network topology, only on the disease and rewiring parameters and on the link density of the network, which is conserved. We give an analytic description of the structure of this co-evolving network of infection through its steady-state degree distribution, obtained by considering the typical life cycle of a single node.

Parcialmente suportado pela FCT ao abrigo do Financiamento Base

Local:  
**Instituto para a Investigação Interdisciplinar**  
Av. Prof. Gama Pinto, 2  
1649-003 Lisboa

