

SECOND WORKSHOP

"DYNAMICAL SYSTEMS APPLIED TO
BIOLOGY AND NATURAL SCIENCES"

2-4 FEBRUARY 2011

CMAF | LISBON UNIVERSITY

PROGRAM

FEBRUARY 2ND 2011

| Registration | | | | |
|-------------------------|---------------------------|---|---------------------|--|
| Amphitheater | | | Room B3-01 | |
| 09:00 - 09:45 | Nico Stollenwerk | Opening | - | - |
| Chair: Nico Stollenwerk | | | | |
| 10:00 - 11:00 | Carlos Braumann | On optimization issues in livestock production: consequences of environmental stochasticity. | - | - |
| 11:00 - 11:30 | Coffee Break | | | |
| Chair: Carlos Braumann | | | | |
| 11:30 - 12:30 | Andreas Bohn | Multi-level modeling of the stochastic spatio-temporal dynamics of phototrophic biofilms. | - | - |
| 12:30 - 13:00 | Anton Camacho | Estimating variability in stochastic nonlinear epidemiological models: assessing the use of the linear noise approximation. | - | - |
| 13:00 - 14:30 | Lunch | | | |
| Chair: Ezio Venturino | | | Chair: Andreas Bohn | |
| 14:30 - 15:00 | Nico Stollenwerk | The interplay between nonlinearity and noise in epidemiological systems. | - | - |
| 15:00 - 15:30 | Markus Schwehm | Exploring the dynamics of epidemic outbreaks on heterogeneous contact networks. | Arno Steinacher | Modelling self-organisation of polar auxin transport in plant cells. |
| 15:30 - 16:00 | Eduardo Massad | Costs considerations of malaria chemoprophylaxis for travelers to endemic areas. | Daniel Damineli | Minimal modeling and time-series analysis of circadian rhythms forced by conflicting environmental signals. |
| 16:00 - 16:30 | Luis Sanchez | A simple approach to the asymptotic behaviour of front profiles for the FKPP equation. | Abdessamad Tridane | Mathematical modeling of the dysfunction of the adaptive treatment and optimal control antiviral therapy of HVB infection. |
| 16:30 - 17:00 | Coffee Break | | | |
| Chair: Horst Malchow | | | | |
| 17:15 - 18:15 | Ezio Venturino | Assessing the vaccination impact on the dynamics of chickenpox and zoster. | - | - |
| 18:15 - 19:45 | Drinks and Poster Session | | | |

Drinks and Poster Session

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| 18:15 - 19:45 | Arno Steinacher | Modelling self-organisation of polar auxin transport in plant cells. |
| 18:15 - 19:45 | Amir Assadi | Measures of Biological Complexity in Dynamics of Gene Networks. |
| 18:15 - 19:45 | Teresa Vaz Martins | Synchronisation Induced by Repulsive Interactions in a System of van der Pol Oscillators. |
| 18:15 - 19:45 | Nico Stollenwerk & João Boto | Super-diffusion in epidemiology. |
| 18:15 - 19:45 | Rui Gonçalves | Cycles and universality in sunspot number fluctuations. |
| 18:15 - 19:45 | Andrea Richter-Boix | Oscillations in constant-parameter SIRS models. |

FEBRUARY 3RD 2011

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| | | Amphitheater | Room B3-01 | |
| Chair: Horst Malchow | | | | |
| 10:00 – 11:00 | Bob Kooi | Complex dynamics and its regulation in a predator-prey model with predator suffering from an infectious disease. | - | - |
| 11:00 – 11:30 | Coffee Break | | | |
| | | Chair: José Lourenço | Chair: Philip Gerrish | |
| 11:30 – 12:00 | Hyun Mo Yang | The effects of temperature on the dynamics of dengue disease and its vector. | Jaime Combadão | On the epidemiological impact of the acute phase of HIV infection. |
| 12:00 – 13:00 | Helena Sofia Rodrigues | Dengue in Cape Verde: modelling, vector control and vaccination. | David Greenhalgh | Mathematically modelling the spread of hepatitis C in injecting drug users. |
| 13:00 – 14:30 | Lunch | | | |
| Chair: Bob Kooi | | | | |
| 14:30 – 15:30 | Bernard Cazelles | Nonlinear dynamics at work in population biology. | - | - |
| 15:30 – 16:00 | Maíra Aguiar | The role of seasonality and import rate in the two strain dengue model: complex dynamics and its implications for data analysis. | - | - |
| 16:00 – 16:30 | Sebastien Ballesteros | On the predictability of dengue epidemics: a sequential Monte Carlo approach. | - | - |
| 16:30 – 17:00 | José Lourenço | Viral and Epidemiological Determinants of the Invasion Dynamics of Novel Dengue Genotypes | - | - |
| 17:00 – 17:30 | Coffee Break | | | |
| Chair: Ezio Venturino | | | | |
| 17:30 – 18:30 | Berhard Quatember | Accurate Method for a Quantitative Assessment of the Regional Heart Wall Motion and its Serviceability to Clinical Studies. | - | - |
| 20:00 | Dinner: Chapitô Restaurant – Meeting at the Lobby in CMAF | | | |

| FEBRUARY 4TH 2011 | | | | |
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| Amphitheater | | | Room B3-01 | |
| Chair: Máira Aguiar | | | | |
| 10:00 - 11:00 | Philip Gerrish | Predicting evolution: Fisher, Price, and beyond. | - | - |
| 11:00 - 11:30 | Coffee Break | | | |
| Chair: Eduardo Massad | | | | |
| 11:30 - 12:00 | Greg King | Signatures of upscale and downscale cascades over the equatorial Pacific. | - | - |
| 12:00 - 12:30 | José Matos | Time and scale dependent DFA analysis applied to global sea-level measurements. | Rui Gonçalves | Universality in nonlinear prediction of complex systems. |
| 12:30 - 13:00 | José Martins | Creation and annihilation operators in the spatial SIS model. | Stefan Wieland | Steady-state Topologies of Adaptive Networks. |
| 13:00 - 14:30 | Lunch | | | |
| Chair: Greg King | | | Chair: Ezio Venturino | |
| 14:30 - 15:30 | Carlos DaCamara | Understanding present fire regimes to anticipate future scenarios. | - | - |
| 15:30 - 16:00 | Célia Gouveia | Post-fire vegetation recovery in Portugal based on spot/vegetation data. | Ganna Rozhnova | Stochastic models of population dynamics. |
| 16:00 - 16:30 | Henrique Pereira | A Linked Socio-Ecological Model of Farmland Abandonment. | Bruno Oliveira | Fit of an immune response model to data from infected mice. |
| 16:30 - 17:00 | Luís Borda de Água | Scaling of species abundance distributions. | Alberto Pinto | A transcritical bifurcation in a immunological model. |
| 17:00 - 17:30 | Coffee Break | | | |
| Chair: Nico Stollenwerk | | | | |
| 17:30 - 18:30 | Horst Malchow | Predative and competitive spatial invasion of a variable environment. | - | - |
| 18:30 - 18:45 | Nico Stollenwerk | Closing | - | - |