FOURTH WORKSHOP

"DYNAMICAL SYSTEMS APPLIED TO BIOLOGY AND NATURAL SCIENCES"

13-15 FEBRUARY 2013

CMAF | LISBON UNIVERSITY

PROGRAM



		13 of February 2013			
08:45 - 09:30		Registration			
		Amphitheater	Room B3-01		
09:30 - 09:45	Nico Stollenwerk	Opening		-	
		Chair: Nico Stollenwe	rk		
09:45 - 10:45	Ira Schwartz	Disease Extinction as a Dynamical System: Stochastic controls from single to multistrain epidemics	-	-	
10:45 - 11:15	Coffee Break				
	Chair: Bob Kooi Chair: Nico Stollenwerk			air: Nico Stollenwerk	
11:15 - 12:15	Bas Kooijman	Metabolic dynamics: acceleration during the life cycle of an individual		_	
12:15 - 12:45	Tiago Domingos	Dynamic Energy Budget Theory: an Axiomatic Theory for Metabolism	Stefan Wieland	Dynamic Equilibria and Coexisting Absorbing States in Asymmetric Adaptive Voter Models	
12:45 - 13:15	Gonçalo Marques	Life Engine — Modeling the individual, the population and the ecosystem using a biological engine	Peyman Ghaffari	Evolution towards critical fluctuations in a system of accidental pathogens	
13:15 - 14:30	Lunch				

Plenary Talk
Invited talk
Contributed talk

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13 of February 2013 Room B3-01 **Amphitheater** Chair: Ezio Venturino Chair: João Boto Modelling and model evaluation Nico on empirical data in 14:45 - 15:45 Stollenwerk epidemiology: dynamic noise, chaos and predictability The diffusion approximation for Jose Fernando The role of seasonality in 15:45 - 16:15 template coexistence in Filipe Rocha vector-borne disease dynamics **Fontanari** protocells On a exponential decay of the Mathematical models of West solution for a stochastic Gustavo Cruz-16:15 - 16:45 Jorge Ferreira **Pacheco** Nile Virus infection coupled system of reactiondiffusion of nonlocal type Coffee Break 16:45 - 17:15 Chair: Ira Schwartz

17:15 - 18:15	Bob Kooi	Robustness of a two-strain dengue fever model with respect to asymmetry		-
18:30 - 19:45	DENFREE INTERNAL MEETING			



		14 of February 2013			
		Amphitheater		Room B3-01	
	Cha	ir: Nico Stollenwerk	Chair: João Boto		
09:30 - 10:30	Rick Paul	Understanding Dengue — the need for basic epidemiological research		-	
10:30 - 11:00	Eduardo Pessanha	Dengue in Urban Settings, the Belo Horizonte Experience	Mahmoud El- Borai	Stochastic parabolic partial differential equations and the brain cancer	
11:00 - 11:30	Coffee Break				
		Chair: Bo	b Kooi		
11:30 - 12:00	Maira Aguiar	Descriptive and Predictive models of dengue epidemiology: an overview	-	_	
12:00 - 13:00	Xavier Rodó	Resolving the interplay between climate forcing, transmission, host immunity and intervention measures in dynamic approaches to infectious diseases	-	-	
13:00 - 14:30	Lunch				

Plenary Talk
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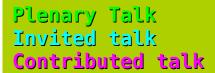
14 of February 2013

	Amphitheater		Room B3-01	
	Chair: Ezio Venturino		Chair: Xavier Rodó	
14:30 - 15:30	Jean Clairambault	Linking PK-PD of anticancer drugs with proliferating cell population dynamic models		-
15:40 - 16:10	Amira Kebir	Evolutionary game theoretical model for hermaphrodite gender conflict	Carlos Dommar	An agent-based model driven by tropical rainfall to understand the spatio-temporal heterogeneity of a chikungunya outbreak
16:10 - 16:40	Adimy Mostafa	Stability and Hopf bifurcation for a cell population model with	Joseph Dureau	Capturing the impact of climate on Dengue using stochastic dynamical systems
16:40 - 17:00	Coffee Break			
	Chair: Derek Cummings			
17:00 - 18:00	Michael Deem	Evolution in the bacterial, archaeal, and jawed vertebrate immune systems		-
18:00 - 19:30	Drinks & Poster Session			
20:00	Workshop Dinner			

Plenary Talk
Invited talk
Contributed talk

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		15 of February 2013		
		Amphitheater	Room B3-01	
		Chair: Maíra Aguiar		
09:30 - 10:30	Eduardo Massad	Quantifying the Risk of Malaria from Prevalence Data		
10:30 - 11:00		Coffee B	reak	
		Chair: Ric	k Paul	
11:30 - 12:00	Bernard Cazelles	Rural origin of the propagation of dengue, an urban disease, in Southeast Asia	_	_
12:00 - 13:00	Derek Cummings	Interactions between serotypes of dengue highlight epidemiological impact of cross-immunity	_	_
13:00 - 14:30	Lunch			



15	of	Februar	y 2013
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	Amphitheater		Room B3-01	
	Chair: Bernard Cazelles		Chair: Peyman Ghaffari	
14:30 - 15:00	Carlos Braumman	Models for population growth in a randomly varying environment and the stochastic calculus used	Paulo Aguiar	Maps in the Brain: encoding spatial information in neuronal activity
15:00 - 15:30	Sandra Lagarto	A Comparison of a bidimensional SDE and VARMA model for forecasting mortality rates	Manuel Ortigueira	Fractional? Where?
15:30 - 16:00	Jesus Artalejo	On the exact measure of the disease spread in stochastic epidemic models	Urszula Skwara	Superdiffusion and epidemiological spreading
16:00 - 16:30	Antonio Gomez- Corral	Control strategies for a stochastic model of host-parasite interaction in a seasonal environment	Ramona Marguta	Spread of infectious diseases in large geographical areas
16:30 - 17:00	Coffee Break			
	Chair: Jean Clairambault			
17:00 - 18:00	Ezio Venturino	Population models of mathematical ecogenetics	-	-
18:00 - 18:10	Closing			

Plenary Talk
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