

Workshop on Unconventional Computing – Erice, 20-26 October 2022

Program

Day	Time	Title	Speaker
Thursday 20	21:30-24:00	Welcome and get together (Marsala Room)	
Friday 21 Introduction to UC	8:45-9:00	Introduction to the Workshop	M. Fanciulli
	9:00-10:40	An Introduction to Reservoir Computing	H. Jaeger
	10:40-11:10	Coffee break	
	11:10-12:50	1) Computation as a dynamical system: general overview of the approach 2) Reservoir Computing as a dynamical system: how it fits the approach, why that makes it a good model for hw computing 3) RC in materia: both using actual hw, and using hw simulations 4) Exploring/configuring materials as RCs, using CHARC	S. Stepney
	13:00-15:00	Lunch	
SPINTRONICS	15:00-15:50	Introduction to Spintronics	M. Kläui
	15:50-16:40	Non-conventional computing with magnetic spin structures.	M. Kläui
	16:40-17:10	Tea Break	
	17:10-18:00	Artificial Spin-Ice	G. Tufte
	18:00-18.30	Participants talk	
	18:30-19:00	Participants talk	
	19:00-19:30	Participants talk	
	20:00	Dinner	
Saturday 22 NANO ELECTRONICS I	9:00-9:50	The Physics of dopants in semiconductors	M. Fanciulli
	9:50-10:40	Dopant Network Processing Units in Silicon I	W.v d. Wiel
	10:40-11:10	Coffee Break	
	11:10-12:00	Dopant Network Processing Units in Silicon II	W.v d. Wiel
	12:00-12:50	Spin-dependent transport in semiconductors	M. Fanciulli
	13:00-15:00	Lunch	
	15:00-15:50	Criticality in nanoparticle networks	S. Brown
	15:50-16:40	RC using nanoparticle networks	S. Brown
	16:40-17:10	Tea Break	
	17:10-18:00	The Receptron: a generalisation of the perceptron for the implementation of information processing systems based on complex nanostructured networks	P. Milani
	18:00-18.30	Participants talk	
	18:30-19:00	Participants talk	
	19:00-19:30	Participants talk	
	20:00	Dinner	
Sunday 23 NANO ELECTRONICS II	9:00-9:50	Physical reservoir computing I	K. Nakajima
	9:50-10:40	Physical reservoir computing II	K. Nakajima
	10:40-11:10	Coffee Break	

	11:10-12:00	Quantum Reservoir Computing	Quoc Hoan Tran
	12:00-12:50	Quantum circuits and quantum reservoir computing	T.C.W. Liew
	13:00-15:00	Lunch	
	15:00-15:50	Quantum reservoir computing with spin	R. Zambrini
	15:50-16:40	Quantum reservoir computing with superconducting circuits	D. Markovic
	16:40-17:10	Tea Break	
	17:10-17:40	Participants talk	
	17:40-18:10	Participants talk	
	18:10-18:40	Participants talk/Labs	
	18:40-19:10	Participant talks/Labs	
	20:00	Dinner	
Monday 24 NEUROMORPHIC	9:00-9:50	Neuroscience I	S. Vassanelli
	9:50-10:40	Neuroscience II	S. Vassanelli
	10:40-11:10	Coffee Break	
	11:10-12:00	Non-conventional computing: material and device engineering for neuromorphic applications I	V. Bragaglia
	12:00-12:50	Non-conventional computing: material and device engineering for neuromorphic applications II	V. Bragaglia
	13:00-14:00	Lunch	
	14:15-20:00	Excursion (Segesta, Selinunte, Motya to be decided)	
	20:00	Dinner	
Tuesday 25	9:00-9:50	Reaction-Diffusion Computing	A. Adamatsky
	9:50-10:40	Physarum Computing	A. Adamatsky
	10:40-11:10	Coffee Break	
	11:10-12:00	Reversible Computing	A. Adamatsky
	12:00-12:50	Unconventional computing systems	G. Sirakoulis
	13:00-15:00	Lunch	
	15:00-15:50	Unconventional computing systems	G. Sirakoulis
	15:50-16:40	Unconventional computing and Music I	E. Miranda
	16:40-17:10	Tea Break	
	17:10-18:00	Unconventional computing and Music II	E. Miranda
	18:00-18:30	Participants talk	
	18:30-19:00	Participants talk	
	19:00-19:30	Participants talk	
20:00	Social Dinner		
Wednesday 26	9:00-9:50	Open discussion on the outlook for UC	
	9:50-10:40	Open discussion on the outlook for UC	
	10:40-11:10	Closing	A. Adamatsky, W. v.d. Wiel, M. Fanciulli
	12:00-14:00	Lunch- Departure	