

**CSRC-ICTP Joint Webinars on
Big Data, Machine Learning and Complexity Research
30-31 July, 2020**

Organizers: Matteo Marsili (QLS/ICTP) and Lei-Han Tang (HKBU/CSRC)

Technical Support: JiZhi and ICTP

Thursday 30 July	Theme	Moderators	Speakers	Title
14:30 – 16:00	Session 1: Spreading and social networks	Linyuan Lv (UESTC/CSRC) Matteo Marsili (QLS/ICTP)	Xiao-Ke Xu	Reconstruction of Transmission Pairs for COVID-19 in family clusters by Crowdsourcing data
			Animesh Mukherjee	The rise of hate speech in online social media (language)
			Walter Quattrociocchi	
16:00 – 16:30	break			
16:30 – 18:00	Session 2: Spin-glass theory, game theory, compressive sensing	Jean Barbier (QLS/ICTP) Haijun Zhou (ITP/CAS)	Chuang Wang	Dynamics of generative adversarial networks in high dimensional limit
			Zhiqin Xu	Macro and micro perspective to understand deep learning: Frequency principle and phase diagram
			Jean Barbier	The all-or-nothing phenomenon: a peculiar phase transition in sparse high-dimensional inference and learning
Friday 31 July	Theme	Moderators	Speakers	Title
14:30 –	Session 3:	Jacopo Grilli	Lei Dai	Fecal microbiota transplantation affects

16:00	Microbiome and Community Ecology	(QLS/ICTP) Liang Tian (HKBU)		post-antibiotics microbiome restoration and intestinal homeostasis in aging mice
			Amir Bashan	Universal Dynamics in Microbial Ecosystems
16:00 – 16:30	break			
16:30 – 18:00	Session 4: Neural Energy, Dynamics and Representation	Antonio Celani (QLS/ICTP) Changsong Zhou (HBU/CSRC)	Yuguo Yu	Human brain energetic connectome based on neuropil distribution
			Changsong Zhou	From sparse irregular spikes to critical avalanches: cost-efficient neural dynamics
			Alessandro Treves	Creating a live crystal in the lab

Simulcast:

JiZhi <https://live.bilibili.com/6782735> and ICTP (zoom)