



MINI-WORKSHOP ON ENTROPIES FOR COMPLEX PROCESSES



Saturday, December 9, 2023, 15:00 - 18:10 CET (9:00-12:10 EST), online

Organizers: Velimir Ilić (MI SANU, Serbia) and Vojkan Jakšić (McGill University, Canada)
with

**Mathematical Institute of the Serbian Academy of Sciences and Arts (Serbia), and
L'institut CY Advanced Studies, CY Cergy Paris Université (France)**

The goal of this meeting is to gather researchers from statistical physics and information theory communities to explore intriguing relationships between these two fields and to explore their roles in the modeling of complex processes. The workshop is organized as a series of eight invited lightning talks which will address the fundamental aspects of information measures towards the applications in large deviation theory, entropy estimation, nonequilibrium thermodynamics, fractal systems and information processing.

All the researchers who have an interest in the aforementioned fields are welcome to register and participate in this meeting.

Registration instructions:

- Follow the registration link:
<https://mitem.mi.sanu.ac.rs/asset/Rfbef6nRHYKCGxqre>
- Fill in the required fields and an invitation link will be sent to the e-mail address you entered. Please also check your spam/trash/promotions folders if you don't see it in your inbox.
- Follow the invitation link. If this is your first visit, you will be asked to create a password by typing it twice, after which your MITEAM account will be created, and you will be automatically logged in to the meeting.
- If you already have a MITEAM account, you can use it to log in to the meeting, after following the invitation link.
 - In case you need it, you can find a short manual here:
<https://mitem.mi.sanu.ac.rs/asset/QMWF5k4HB5HaqSvFg>.
- If you encounter any difficulties in the registration, please contact Božo Vuković (MI SANU, Serbia), via email address: bozo.n.vukovic@gmail.com.

We are looking forward to meeting you!



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PROGRAM	
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15:00-15:10	Vojkan Jakšić (McGill University, Canada), Flora Koukiou (CY Advanced Studies, France), Zoran Ognjanović (MI SANU, Serbia), Velimir Ilić (MI SANU, Serbia)
OPENING	
15:10-15:25	Édgar Roldán (ICTP, Italy) video Entropy production and irreversibility estimates in stationary processes: Footprints of dissipation in active systems
15:25-15:40	slides Raul Toral (IFISC, Spain) video Estimation of Shannon entropy from finite sample data with applications to systems with memory
15:40-15:55	Velimir Ilić (MI SANU, Serbia) video On the Kapur entropy rates of Student's t-process
15:55-16:10	slides Lazar Stojković (PMF, University of Niš, Serbia) video Bounds of generalized cut-off rates for memoryless discrete input AWGN channels
16:10-16:30	OPEN DISCUSSION
16:30-16:45	BREAK
16:45-17:00	Renaud Raquépas (Courant Institute of Mathematical Sciences, USA) slides video Return times and waiting times as entropy estimators I: history and law of large numbers
17:00-17:15	Noé Cuneo (Université Paris Cité, France) video Return times and waiting times as entropy estimators II: large deviations
17:15-17:30	Nicholas Barnfield (McGill University, Canada) slides video Return times and waiting times as entropy estimators III: Merhav-Ziv estimator
17:30-17:45	Tristan Benoist (Toulouse Mathematics Institute, France) slides video On repeated quantum measurements
17:45-18:05	OPEN DISCUSSION
18:05-18:10	CLOSING