

Open Talk

4th July, 2018

4:00 PM

Fermion Hall

SPEAKER

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TITLE OF THE TALK

Towards a unified description of Markovianity and its applications

ABSTRACT

We present a general framework for the information backflow (IB) approach of Markovianity that not only includes a large number, if not all, of IB prescriptions proposed so far but also is equivalent to completely positive divisibility for invertible evolutions. Following the common approach of IB, where monotonic decay of some physical property or some information quantifier is seen as the definition of Markovianity, we propose in our framework a general description of what should be called a proper “physicality quantifier” to define Markovianity. We elucidate different properties of our framework and use them to argue that an infinite family of non-Markovianity measures can be constructed, which would capture varied strengths of non-Markovianity in the dynamics. Moreover, we show that generalized trace-distance measure in two dimensions serve as a sufficient criteria for IB Markovianity for a number of prescriptions suggested earlier in the literature.

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HOST FACULTY

Professor Archan S Majumdar

Senior Professor

Department of Astrophysics & Cosmology

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