Partition-Valued Markov Processes

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ABSTRACT

Partition-valued processes are often useful in modeling how relationships among individuals evolve with some index (time, \( N \), etc.). In genetics, random partitions can be used to model in which cluster of the population an individual lies at selected loci on a chromosome. When using a partition-valued Markov process to model the sequence of partitions induced by haplotypes for a sample of individuals, it is natural to require that the process is both reversible and consistent. In this talk, I will discuss why these conditions are natural in this context and how they give rise to a class of reversible and consistent partition-valued Markov processes.