

B. PROJET DE CONFÉRENCE INVITÉE ou GUEST LECTURE

Rappel : A la faveur de la venue d'un chercheur international réputé, l'objectif de ces conférences invitées est de favoriser, dans le cadre de l'Institut d'Études Avancées, une ouverture disciplinaire et des échanges entre collègues de laboratoires différents mais qui partagent des intérêts scientifiques congruents. L'IEA établira un agenda des guest lecture en fonction des propositions et prendra contact avec les chercheurs invitants pour leur organisation.

Titre de la conférence : A probabilistic analysis of a discrete-time evolution in recombination

Date proposée (indicatif): 21 juin 2019

Résumé :

We study the discrete-time evolution of a recombination transformation in population genetics introduced in: E. Baake and M. Baake. 'An exactly solved model for mutation, recombination and selection'. Canadian J. Math . (2003, 2008) .

The transformation is a weighted sums of products of marginal measures. It corresponds to the law of the genetic information of a child which is the random combination of two independent copies of the ancestors where the pieces are chosen in a random way with probabilities given by the weights.

We give the formula of the n th iterate of the operator and show that it corresponds to the mean value at time n of a Markov chain acting on a class of partitions. This chain converges to the finest partition whose associated measure is the limit partition of the operator. We describe the geometric decay-rate to this limit and the quasi-limiting behavior of the Markov chain when conditioned on the event that the chain does not hit the limit.

The partitions charging the quasi-limiting behavior are the candidates of the genetic composition of a population when a long time has been elapsed and the limit distribution has not been attained.

Reference: S. Martínez. A probabilistic analysis of a discrete-time evolution in recombination. Advances in Applied Mathematics (91, p. 115-136 (2017).

Corrigendum in <http://static.cmm.uchile.cl/descargas/2018/CorrigendumAAM2017.pdf>

GL : 21/06 (rendredi)

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