25e Congrès Général
de la **Société Française** de Physique 🖋

ID de Contribution: **75**   Type: **Orale**

Linking lineage and population observables in biological branching processes

mardi 9 juillet 2019 09:00 (15 minutes)

Using a population dynamics inspired by an ensemble of growing cells, a set of fluctuation theorems linking observables measured at the lineage and population levels are derived [1]. One of these relations implies specific inequalities comparing the population doubling time with the mean generation time at the lineage or population levels. While these inequalities have been derived before for age controlled models with negligible mother-daughter correlations, we show that they also hold for a broad class of size-controlled models. We discuss the implications of this result for the interpretation of a recent experiment in which the growth of bacteria strains has been probed at the single cell level.

[1] Linking lineage and population observables in biological branching processes, https://www.biorxiv.org/content/10.1101/527291v1

Choix de session parallèle

2.4 Fluctuation et biologie

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Classification de Session: Séance Parallèle