

Mercredi 28 Mai 2025 à 14h

Attention : jour et heure inhabituelle

Salle de conférence Bâtiment 84, Ecole Polytechnique

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Modelling of the replication-division cycles coordination in E. coli

An accurate coordination between replication and division cycles is essential to ensure a proper partitioning of genetic material during cell division. While significant advances have shed light on molecular mechanisms involved in the synchronization of DNA replication and cell division, the nature of the cellular clocks that control the timing of these processes in *E. coli* remains debated. In particular, the extent to which replication controls division—if at all—remains an open question. This presentation will present new insights into this question through the lens of mathematical modelling. A unified framework will be introduced, including a statistical methodology for model comparison. In light of this analysis, a novel model of replication-division coordination will be proposed.