

## FMfI2023 Poster Session

Name

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Affiliation

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Poster title

**The behavior of mean fitness during range expansions in different dimensions**

Abstract

Most species on Earth exhibit fluctuating habitats, and understanding the range expansion of those habitats is of great importance in evolutionary biology. Their distribution, however, is nontrivial even in a topologically deterministic model of migration, since almost all organisms have multiple segregating loci which incur non-deterministic mutations. In previous studies, a theoretical model was developed for the evolution of fitness of a population during a range expansion. Additionally, some simulation results for 1D and 2D have been given, but only up to 800 generations. In this study, we explore the theoretical model over different conditions and a bigger number of generations than prior research, offer some new normalization methods, and explore the case of axial expansion in 3D (such that might happen during interstellar colonization).

Short Bio

A ukrainian-born genetics researcher in Japan. Graduated with a BSc degree in astrophysics from Kyiv University in 2018. Moved to Japan in 2019 to pursue a Master's course in particle physics at Kobe University. Enrolled in said course in 2020, and developed practical research skills during the two-year MSc course; graduated in 2022. Was employed at RIKEN SPring-8 the same year as an engineer. Moved inside RIKEN to a research post at the Center for Advanced Intelligence Project (AIP) at the start of 2023. Presently engaged in big data analysis and probabilistic research in the field of genetics.