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Multiscaling Modelling in Evolutionary Dynamics

We start from a family of continuous approximations to the probability density of a frequency dependent Moran process studied by Chalub & Souza in [1]. These approximation, depending on the scalings, can be of diffusive or non-diffusive type, the latter being equivalent to the Replicator Dynamics. We then study the small diffusion limit, and show how the Replicator Dynamics can be consistenly fitted in a diffusive approximation. Some additional results concerning the fixation probabilites in this limit are also presented. This is joint work with Fabio Chalub.

References

[1] Fabio A. C. C. Chalub & Max O. Souza, *From discrete to continuous evolution models: A unifying approach to drift-diffusion and replicator dynamics*, Theoretical Population Biology, **76** (4) 268–277, 2009.