



Figure 1: Behaviour of the FPK model. a) Example of a potential with $V(x) = 3x^4 - 6x^2$. b) The stationary distribution of the process, $\mathcal{N} \exp(-V(x))$, can be interpreted as a macroevolutionary landscape. Wells of the potential become peaks in the macroevolutionary landscape. Differences in the potential generate a force $-V'(x)$, which attracts trait values towards the two peaks of the macroevolutionary landscape, as indicated by the arrows. c) One simulation of the evolution of a trait in a clade of four species in this macroevolutionary landscape: the x-axis shows time and the y-axis the trait value of each species, in different colors. The ancestral trait value lies between the two peaks, and species' traits get attracted towards one of the peaks, which have equal heights. The bounds of the trait interval, represented by thick horizontal lines, are not reached during the process and thus do not influence the evolution of the trait in this case.