A SOLUTION OF THE CROW-KIMURA EVOLUTION MODEL ON FLUCTUATING FITNESS LANDSCAPES

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The article discusses the Crow-Kimura model in the context of random transitions between different fitness landscapes. The duration of epochs, during which the fitness landscape is constant over time, is modeled by an exponential distribution. To obtain an exact solution, a system of functional equations is required. However, to approximate the model, we consider the cases of slow or fast transitions and calculate the first-order corrections using either the transition rate or its inverse. We also investigate the model for a small number of genes and identify the exact transition points to the transient phase.