BIODYNAMICA 9.10

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BIODYNAMICA is a numerical stochastic evolutionary algorithm which simulates evolution by modeling the interaction between mating, reproduction, variation, phenotypic expression and selection, on a randomly created virtual population of organisms defined by multiple genes (up to 20), each with multiple alleles (normally 10). BIODYNAMICA allows visualizing the dynamic interactions affecting the outcome of evolution when various genetic traits are selected simultaneously, showing the effect of sexual selection, multi-sexual reproductive systems and live history characteristics on the evolution of organisms. The book *Evolutionary Dynamics: The survival of the luckiest* is based on this program and is available at *http://atta.labb.usb.ve/klaus/klaus.htm*

To run Biodynamica proceed as follows: Click with mouse on **NewFile**, **Load** a demo file, **Close** and **Start.** You will start to see the number of individuals surviving in the population (POP) in a logarithmic scale; and, depending on what was selected in PLOT, the mean value of the alleles of each gene, or allelic frequency distribution in the population of 12 selected genes on a color scale, where the maximum corresponds to 90% or more of the population showing that specific allele at that specific time step (in yellow); and the minimum (in black) corresponds to a few individuals (more than 1) showing the allele. Alleles absent in the whole population are indicated in blue (this is valid for colorcode = 1). For other color scales, read scale in main window in 10% intervals from 0 to 100 %.

Clicking on any of the plots will amplify the frequency distribution of that particular gene or phenotype in the population. Clicking again returns you to the main screen. Clicking on "Summary" or "Table" provides you with alternative views of the data. Clicking on Prt may print all screens.

The main screen will show you the following menus:

NewFiles Multisp Genes Parameters Initialization Filter Plot HypSim Help
External
Internal