Coevolution of dispersal in a parasitoid-host system

Electronic Supplementary Material

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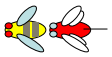
November 18, 2008



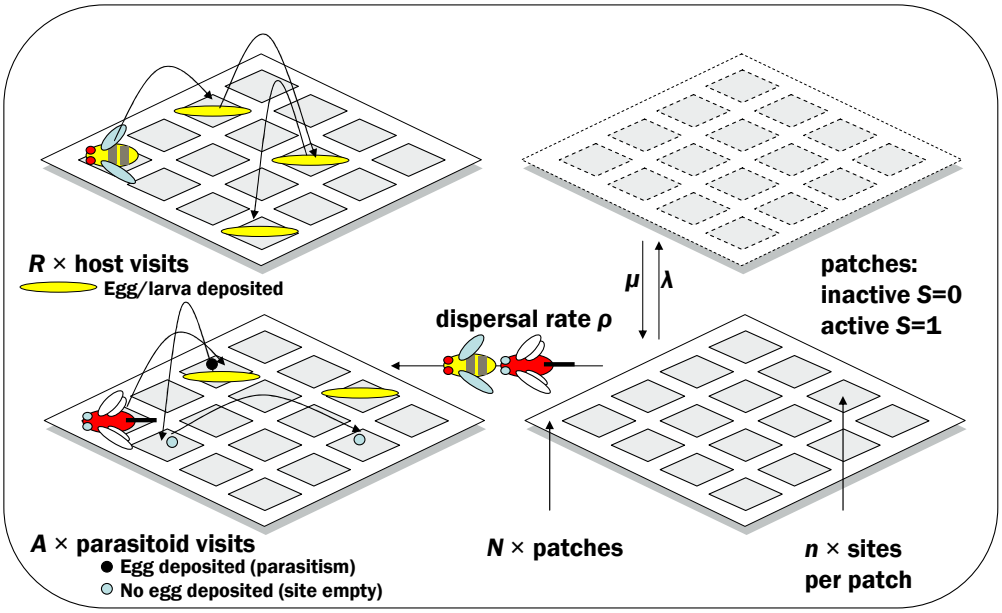


Figure S1. Schematic showing model concept and parameters.

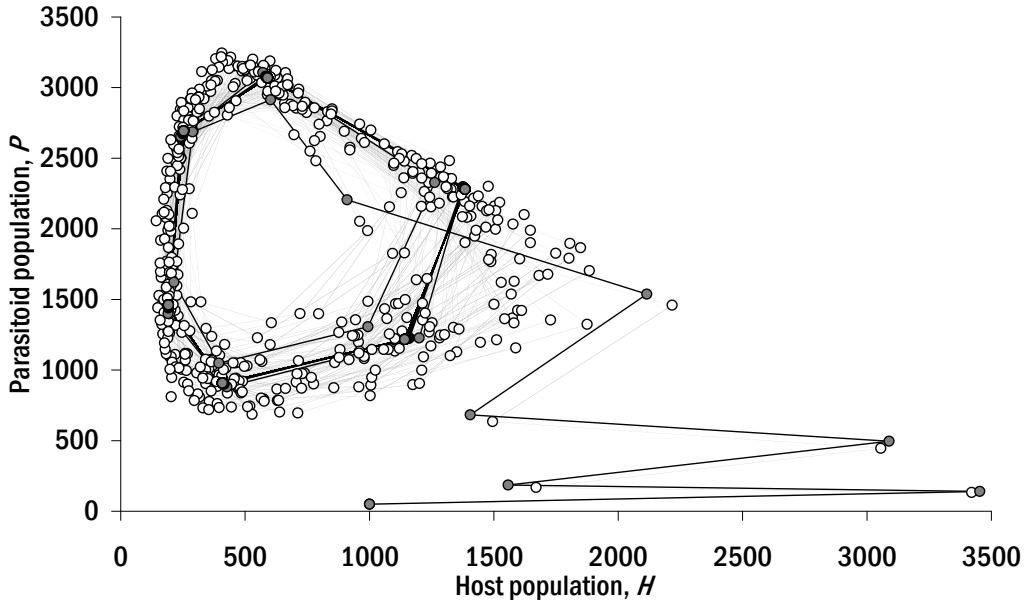


Figure S2. Trajectory of host and parasitoid populations for a single-patch model ($N = 1$, $S = 1$) through time, with $R = 8$, $A = 8$, $n = 10000$ and initial populations $H_0 = 1000$ and $P_0 = 50$. White symbols: stochastic model converging to a noisy limit cycle; black symbols: deterministic model (Eq(s). 2 in main text) with the same parameters, shown converging to a limit cycle with similar mean dynamics.

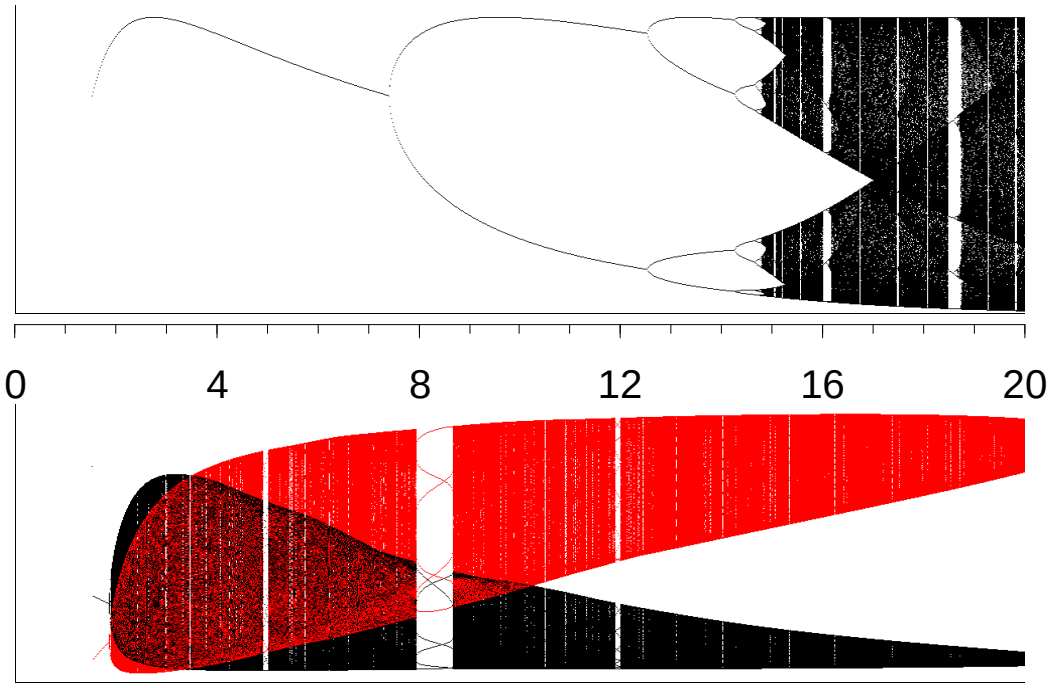


Figure S3. Bifurcation diagram showing cycles and chaos for the single-patch deterministic model, $n = 10000$, versus R (x-axis). Host population indicated in black, parasitoid population in red. Upper panel: $A = 0$; lower panel: $A = 8$. Note for $A = 8$ the stable six-point limit cycle can be seen as shown in Fig. S2.

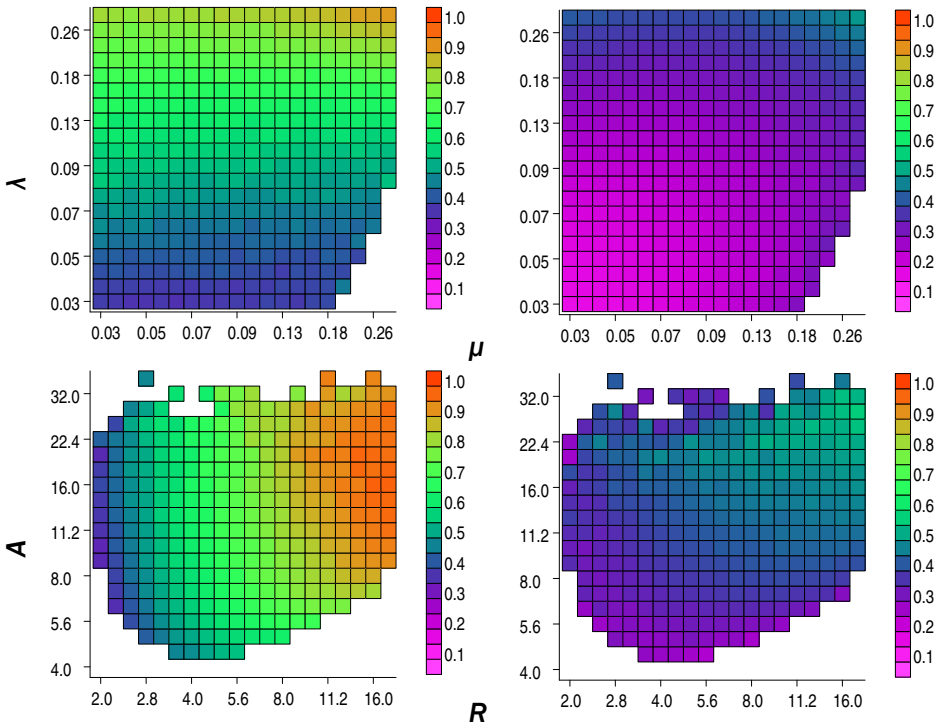


Figure S4. Equilbrium $\bar{\rho_H}$ (left) and $\bar{\rho_P}$ (right) versus varied patch dynamic parameters (top) and host and parasitoid parameters (bottom). Top: μ (x-axis) versus λ (y-axis); bottom: R_0 (x-axis) versus A (y-axis). Means of c. 15 simulations are plotted.

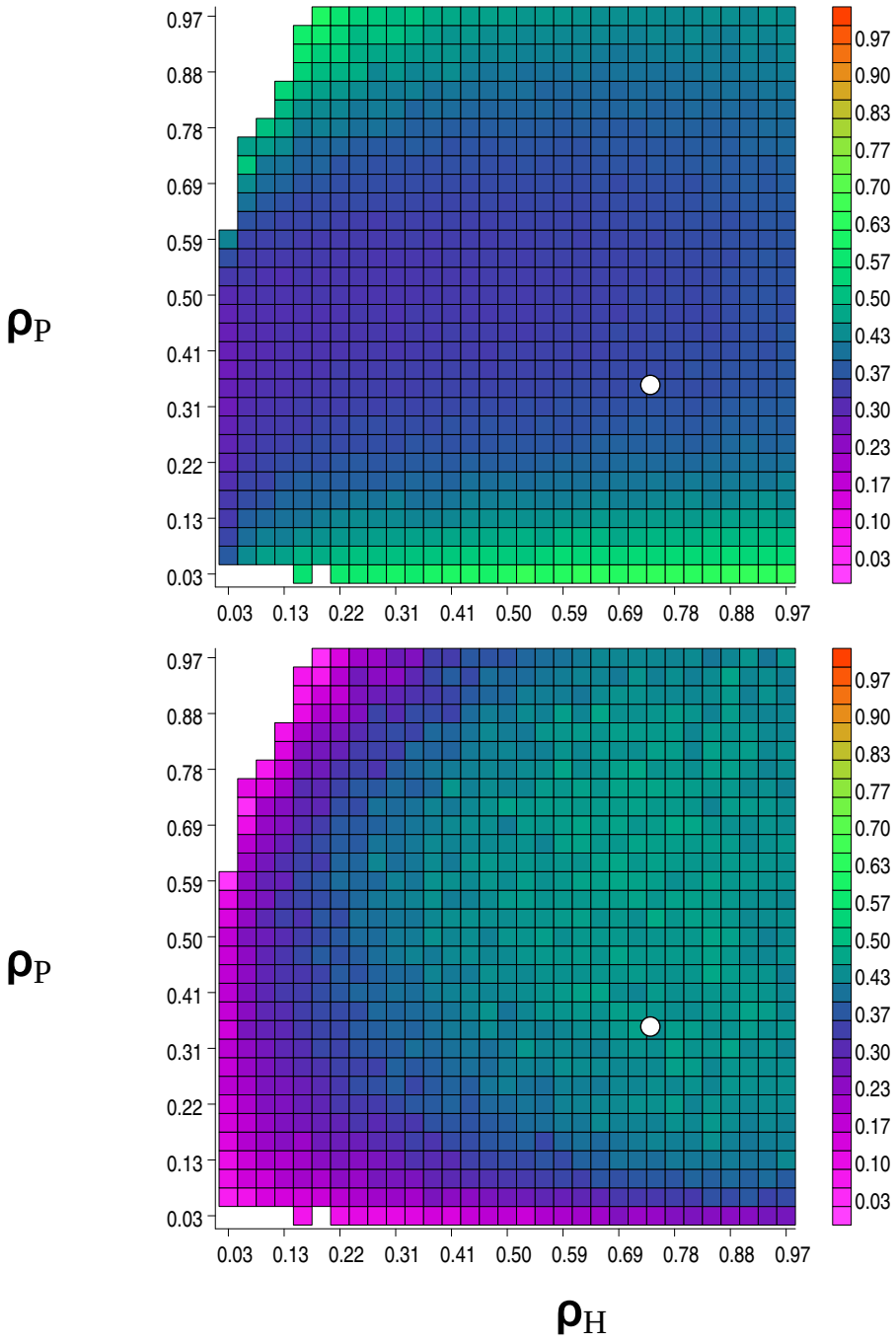


Figure S5. Host (top) and parasitoid (bottom) population size (10000s) versus fixed ρ_P and ρ_H. $R = 8$, $A = 8$, $n = 500$, $N = 100$, $\lambda = \mu = 0.25$. The point to which the populations evolve when allowed to do so is marked in white. Medians of 3 simulations are plotted.