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Appendix 1

Figure A1. Numerical stability analysis plot example for a predator-prey model. Jacobian eigenvalue (\(\lambda\)) indicated by shading, and lines separate regions of behavior: stable with no oscillations (S), stable with dampened oscillations (SO), and unstable with diverging oscillations (UO). Blank areas show parameter combinations without a nonzero equilibrium. Star marks an example of a model parameter combination at steady state.
Figure A2. Numerical stability analysis plot example for a competition model. Jacobian eigenvalue ($\lambda$) indicated by shading, and lines separate regions of behavior: stable coexistence (C), competitive exclusion (E; species 1 ‘wins’), and unstable equilibrium (U). Star marks an example of a model parameter combination at steady state.
Figure A3. The relative elasticity of extinction probability relative to disturbance frequency and magnitude. The relative elasticity is measured as $\theta$, the angle in degrees relative to the x-axis of the elasticity vectors for frequency and magnitude. Results (species 1) are shown for competition models with (a) coexistence dynamics and disturbance applied to population abundance; and (b) exclusion dynamics and disturbance applied to population abundance. $\theta$ values closer to 0° indicate greater proportional effect of frequency on probability of extinction; values closer to 90° indicate magnitude is more important in affecting probability of extinction. White areas denote space for which there are no values. Black lines separate regions where $\theta < 45°$ from regions where $\theta \geq 45°$. 