

## Ecological Orbits. How planets move and populations grow.

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The lecture follows the upcoming book by Ginzburg and Colyvan (2003, Oxford University Press). The main thesis is to show that populations are inertial in the sense that Malthusian growth in ecology plays the role of the first Newton's law in physics. The mechanism of inertia which is most noticeable in data is the maternal effect, or transfer of quality between mothers and daughters. This mechanism induces a delayed reaction of growth on the time scale of generations. Single species theory of cycles viewed on generational, not chronological time scale, presents a strong competition to the traditional predator-prey view on causes of cyclicity. The goal is to present a research program in theoretical ecology in which single species are viewed at the start as two-dimensional entities. Partial success of this program include explanations of periods of cyclic species and some of the known body size allometries.

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