

The course

For me the DEB course meant in a new and highly useful way way for looking at organisms. In my opinion the structure and sequence of chapters in the book is fine as it is. Although there are many examples given, perhaps an additional part (appendix?) with the complete energetics of some representative organisms could be helpful?

I feel that I would have had a deeper understanding of the quantitative relationships if I would have actually done more exercises. Perhaps it would have been better if a number of basal exercises were more or less obliged instead of voluntary. The extra time needed could be compensated by excluding some parts of the book, which are less important.

Given my interest (large-scale temporal and spatial patterns) I would welcome any further extensions of the theory at the population level, especially towards biogeography and changes in time (from seasonal to longer time scales).

Research

My current research deals with the relation between community evolution in fossil small mammals and climate change on geological time scales. I imagine using DEB theory to generate and test general hypotheses on extinction / migration probabilities of eco-physiological types of species given their general ecology and physiology (body size, dietary preference and feeding habitat) on the one hand, and change in climatic regime and food availability on the other hand. Ideally, the research steps (increasing complexity) could be:

1. Establish secondary body-size scaling relationships (minimum food density, reproduction, survival, direct temperature and evaporation effects) assuming constant food densities (size effect).
2. Extend 1. by including the effect of (combinations of) different food types (food type effect).
3. Establish tertiary body-size relationships (population level): simulate population changes during the annual cycle under different (seasonally changing) food regimes.
4. Perform first tests of the hypotheses using data on recent geographical trends in distribution, abundance, and body size.
5. Provide energetic explanations for observed patterns of appearance / disappearance and body size evolution of eco-physiological types of small-mammal species in Europe during the last 25 million years on as a function of climatic and environmental change.

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