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Georg Hetzer* (hetzege@auburn.edu). *Energy Balance Climate Models with Bio-Feedback.*

Energy balance climate models are simple diagnostic models which describe the evolution of a long-term mean of temperature by employing the relevant balance equations for the heat fluxes involved. The mean horizontal heat flux is approxiamted by a diffusion operator, and important feedback processes appear in the net radiation flux. Based on daisy world models, I am going to describe a mathematical framework for adding a bio-feedback, which means in the context of an energy balance model, the interaction between vegetation and net radiation flux. A basic dynamic theory for the resulting reaction-diffusion problem will be presented. (Received September 11, 2011)