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Timothy Robertson* (robertsont@andrews.edu) and **Joon Hyuk Kang**. *Coexistence conditions for nonlinear reaction-diffusion population models.*

We consider a nonlinear partial differential equation population model. Conditions for positive steady-state solutions are provided for three cases: two cooperating species, multiple species with unchanging interactions, and multiple species with varying interactions. We allow for variations such as the interaction changing from competition to cooperation. (Received September 20, 2016)