

**Dhar, J.**

**A prey-predator model with diffusion and a supplementary resource for the prey in a two-patch environment.** (English) [Zbl 1071.92039](#)

[Math. Model. Anal. 9, No. 1, 9-24 \(2004\)](#).

Summary: A prey-predator dynamics, where the predator species partially depends upon the prey species in a two patch habitat with diffusion and there is a non-diffusing additional resource for the prey population, is modeled and analyzed. It is shown, that there exists a positive, monotonic, continuous steady state solution with continuous matching at the interface for both species separately. Further, we obtain conditions for asymptotic stability for both linear and nonlinear cases.

**MSC:**

[92D40](#) Ecology  
[35K57](#) Reaction-diffusion equations  
[35B40](#) Asymptotic behavior of solutions to PDEs  
[35B35](#) Stability in context of PDEs

Cited in **5** Documents

**Keywords:**

[Population diffusion](#); [patchiness](#); [supplementary resource](#); [steady state solution](#); [stability](#)