1067-92-752   **Zhilan Feng**, **Ronsong Liu**, **Zhipeng Qiu** and **Joaquin Rivera***
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Coexistence of competitors in deterministic and stochastic patchy environments.

The spatial component of ecological interactions plays an important role in shaping ecological communities. A crucial ecological question is how does habitat disturbance and fragmentation affect species persistence and diversity? In this paper, we develop a deterministic metapopulation model that takes into account a time-dependent patchy environment, thus our model and analysis takes into account environmental changes. We investigate the effects that spatial variations have on persistence and coexistence of two competing species. In particular, we study the local behavior of the model, and we provide a rigorous proof for the global analysis of our model. Also, we compare the results of the deterministic model with simulations of a stochastic version of the model. (Received September 14, 2010)