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**Nhu N, Nguyen\*** ([nhu.math.2611@gmail.com](mailto:nhu.math.2611@gmail.com)) and **George Yin**. *Stochastic Partial Differential Equation Models for Spatially Dependent Predator-Prey Equations*.

Stemming from the stochastic Lotka-Volterra or predator-prey equations, this work aims to model the spatial inhomogeneity by using stochastic partial differential equations (SPDEs). Compared to the classical models, the SPDE models are more versatile. To incorporate more qualitative features of the ratio-dependent models, the Beddington-DeAngelis functional response is also used. To analyze the systems under consideration, first existence and uniqueness of solutions of the SPDEs are obtained using the notion of mild solutions. Then sufficient conditions for permanence and extinction are derived. (Received September 12, 2019)