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*Nonlinear nonautonomous parabolic evolution equations in an infinite cylinder.*

It is well known that one can often use a topological degree argument to prove the existence of solutions to differential equations. However, when working with an unbounded domain such methods generally give little global information. A newer theory of topological degree (Fitzpatrick, Pejsachowicz, and Rabier, 1990's) is used to analyze a class of nonlinear parabolic evolution equations. By proving that a solution exists within a particular function space, one can conclude that solutions have global properties that may not be available otherwise. (Received September 27, 2005)