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Bounded Solutions of Nonlinear Parabolic Systems with Nonlinear Boundary Conditions.

We consider coupled systems of two nonlinear parabolic equations on a domain which is unbounded in time (namely the entire real line) and bounded in space with nonlinear boundary conditions. We establish the existence of bounded solutions existing for all time by using a combination of a priori estimates, comparison techniques, interpolation inequalities, approximations, and embedding of function spaces. We illustrate the results with examples which include cooperative or competitive models in ecology. (Received August 25, 2008)