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Ping Liu and **Junping Shi*** (jxshix@wm.edu), Department of mathematics, College of William and Mary, Williamsburg, VA 23187. *Bifurcation of positive solutions to scalar reaction–diffusion equations with nonlinear boundary condition.*

The bifurcation of non-trivial steady state solutions of a scalar reaction–diffusion equation with nonlinear boundary conditions is considered using several new abstract bifurcation theorems. The existence and stability of positive steady state solutions are proved using a unified approach. The general results are applied to a Laplace equation with nonlinear boundary condition and bistable nonlinearity, and an elliptic equation with superlinear nonlinearity and sublinear boundary conditions. (Received February 10, 2018)