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State Dependent Advanced-Delay BVPs

Although not widely considered in the literature, several problems, including travelling waves on lattices, naturally give rise to advanced-delay boundary value problems. Since there is very little theory to underpin these problems, numerical results are needed to provide intuition, but are themselves difficult to obtain. Problems are compounded by state-dependency of the delay terms. We highlight ongoing work in this area, illustrating the issues using a Bando discrete car-following model with reaction time delay, and some model problems with linear state-dependency.