A posteriori error estimation in the maximum norm

Alan Demlow
Texas A&M University, United States
demlow@math.tamu.edu

Finite element error estimation in non-energy norms is important in many applications, but presents significant technical difficulties beyond those encountered when estimating energy norm errors. In this talk I will survey techniques for estimating errors a posteriori in the maximum norm for finite element, including recent results on estimating maximum errors for singularly perturbed convection-diffusion equations. Time permitting, I will also discuss challenges associated with proving convergence of adaptive finite element algorithms for controlling maximum errors.