

Talk announcement

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Tuesday, Apr 14, 2026

16:15, S2 416-1

A-posteriori error estimation in Reduced Basis Methods

In this talk, we investigate residual-based error bounds for parameter-dependent problems arising in reduced basis (RB) methods. Starting with the error equation in the elliptic setting, we derive an error bound for the H^1 -norm. As the RB method is often applied in real time, it is crucial to have an efficient way of computing the error. We demonstrate how this can be achieved in the elliptic setting and present results for a stationary heat transfer problem with different conductivity parameters. In the second part of the talk, we will move on to parabolic problems and prove an error bound for a time-discretised problem. We highlight what is different from the elliptic setting, especially with regard to the efficient computation of the error bound. Finally, we present numerical results for an instationary heat conduction problem.