Goal-oriented error estimation and adaptivity

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Short Description

In many practical applications (possibly) nonlinear partial differential equations are solved using some discretization methods. However, this leads to approximations of the solution only. Furthermore, often the solution itself is not of primary interest but some specific functional evaluations at the solution of the partial differential equation. Goal oriented error estimation is used to estimate the error in these functional evaluations; also called quantites of interest. This may include discretization error, model error, algebraic errors, iteration errors and many more. In addition, the previous points lead to mesh adaptivity, model adaptivity and other adaptive algorithms like solvers with adaptive accuracy. These developments are very challenging and therefore it is still a very active research area. In this minisymposium recent developments will be brought together with the emphasis on:

- nonlinear partial differential equations

- space-time methods

- algebraic and iteration errors

- efficiency and reliability

- convergence rates