

Functional A Posteriori Error Estimates for the Nonlinear Poisson-Boltzmann Equation

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In this talk, we show a short derivation of the Poisson-Boltzmann equation (PBE) and then the focus goes on deriving a functional a posteriori error estimate for the PBE. The advantage of the functional a posteriori error estimates based on the duality theory is that only the structure of the equation alone is exploited and therefore no global or local constants enter in the estimate. This is in contrast to other methods, e.g a residual based one, which depend on the particular triangulation. Therefore functional type a posteriori error estimates give not only an error indicator, but also a guaranteed bound on the error. We also show some numerical experiments.

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