Internality of generalized averaged Gaussian quadrature rules

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Abstract

Generalized (also called optimal) averaged Gauss quadrature formulas may yield higher accuracy than Gauss quadrature rules that use the same moment information. They therefore may be attractive to use when moments or modified moments are cumbersome to evaluate. However, generalized averaged Gauss quadrature formulas may be not internal, i. e., they may have nodes outside the convex hull of the support of the measure that defines the associated Gauss rules. It may therefore not be possible to use generalized averaged Gauss quadrature formulas with integrands that only are defined on the convex hull of the support of the measure. A survey of our results on internality of generalized averaged Gaussian quadrature rules and their truncations will be presented.

Keywords: Generalized averaged Gauss quadrature, Internality of quadrature rule

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