Incorporating the external zeros of the integrand into certain quadrature rules

Jelena Tomanović

Department of Mathematics, University of Belgrade - Faculty of Mechanical Engineering (Serbia)
jtomanovic@mas.bg.ac.rs

Quadrature formulas are often constructed to be exact on the space of functions that are easily integrated and that are in some sense similar to the integrand. This motivates us to examine how the known properties of the integrand, such as its external zeros (zeros outside the (closed) interval of integration), can be used in order to improve the accuracy of certain quadrature formulas. In particular, we consider Gauss-type quadrature rules into which the external zeros of the integrand are incorporated.