New quadrature method based on Chebyshev spaces

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Abstract

In this work, we present a generalization of the quadrature formula: the main idea is to replace the polynomial space by a Chebyshev spaces. We show the insufficiency of the classical method for certain classes of functions using some examples of oscillating functions. Then we show the efficiency of our proposed scheme. Finally, Some Numerical experiments are presented.

Keywords: Chebyshev space, quadrature.

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