

Rajković, Predrag M.; Marinković, Sladjana D.; Stanković, Miomir S.

Finding the zeros of the functions treated by q -calculus. (English) [\[Zbl 1087.33009\]](#)

Mladenov, Ivaïlo M.(ed.) et al., Proceedings of the 6th international conference on geometry, integrability and quantization, Sts. Constantine and Elena, Bulgaria, June 3–10, 2004. Sofia: Bulgarian Academy of Sciences (ISBN 954-84952-9-5/pbk). 284-286 (2005).

The authors prove a q -analogue of the Taylor formula for functions of several variables and develop some new methods for solving equations and systems of equations. They apply their methods in solving equations where the function involved is defined by some q -integral. The convergence and accuracy of the introduced methods are discussed and several examples are given.

For the entire collection see [\[Zbl 1066.53003\]](#).

Reviewer: [Stamatis Koumandos \(Nicosia\)](#)

MSC:

- [33D45](#) Basic orthogonal polynomials and functions (Askey-Wilson polynomials, etc.)
- [05A30](#) q -calculus and related topics
- [33D90](#) Applications of basic hypergeometric functions
- [33D60](#) Basic hypergeometric integrals and functions defined by them

Keywords:

Partial q -derivatives; q -Taylor formula; q -Newton method; zeros of functions defined by q -integrals