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Local convergence analysis of a modified Newton-Jarratt's composition under weak conditions

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Abstract: A. Cordero et. al (2010) considered a modified Newton-Jarratt's composition to solve nonlinear equations. In this study, using decomposition technique under weaker assumptions we extend the applicability of this method. Numerical examples where earlier results cannot apply to solve equations but our results can apply are also given in this study.

Keywords: Newton-Jarratt's method; radius of convergence; local convergence; decomposition techniques; restricted convergence domain
AMS Subject Classification: 65D10, 65D99, 65J20, 49M15, 74G20, 41A25

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