

On generalized Newton type iterative methods with high efficiency

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In this talk, the aim is to discuss various Newton type iterative methods for solving non-linear equations. In particular, the focus will be on Aitken type methods, in which the interpolation nodes are controlled by variant of Newton type methods or by a general method of order p . The order of such methods can be increased to as high as desired and in limiting case, the efficiency tends to 2. We shall discuss the case of simple as well as multiple roots. Moreover, numerical examples will be provided in support of the theoretical result.