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Article

On Some New Jungck–Fisher–Wardowski Type Fixed Point Results

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Abstract: Many authors used the concept of $\mathcal{F}-$contraction introduced by Wardowski in 2012 in order to define and prove new results on fixed points in complete metric spaces. In some later papers (for example Proinov P.D., J. Fixed Point Theory Appl. (2020)22:21, doi:10.1007/s11784-020-0756-1) it is shown that conditions (F2) and (F3) are not necessary to prove Wardowski's results. In this article we use a new approach in proving that the Picard–Jungck sequence is a Cauchy one. It helps us obtain new Jungck–Fisher–Wardowski type results using Wardowski's condition (F1) only, but in a way that differs from the previous approaches. Along with that, we came to several new contractive conditions not known in the fixed point theory so far. With the new results presented in the article, we generalize, extend, unify and enrich methods presented in the literature that we cite.

Keywords: banach contraction principle; Fisher fixed point theorem; Wardowski-type contractions; compatible; weakly compatible; common fixed point

MSC: 47H10; 54H25