

1133-90-13

S. K. Padhan* (sarojpadhan@gmail.com), Department of Mathematics, Burla, Orissa 768018, India. *A new approach of duality in nonlinear programming.*

The goal of the present investigation is to introduce the third order duality in nonlinear programming problems, because in certain situations, first and second order duality do not yield solutions whereas the third order duality succeeds in finding the desirable results. Desired duality theorems are proved for the pair of primal and the corresponding third order dual problem. Again the above results are proved for the variational problems. The importance of the present work is justified through appropriate counterexamples. It is also seen that many existing results of previous authors are particular cases of the present works. (Received April 11, 2017)