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**Mohsen Razzaghi\*** (rzzaghi@math.msstate.edu), 410 Allen Hall, P.O. Drawer MA, Mississippi State, MS 39762. *Solution of Variational Problems by using a Hybrid Functions Approximation.*

In this work, we present a new direct computational method to solve variational problems. The approach is based on reducing the variational problems into a set of algebraic equations by first expanding the required solution as a hybrid function with unknown coefficient. These hybrid functions, which consist of block-pulse functions and Bernoulli polynomials are first introduced. Numerical examples are included to demonstrate the applicability and the accuracy of the proposed method and a comparison is made with the existing results. (Received September 09, 2012)