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N. K. Sahu* (nabin6582@gmail.com), Department of Mathematics, Veer Surendra Sai University of Technology, Burla, Orissa 768018, India. *Existence of Solutions to Variational Inequalities on Banach Lattices.*

In 2012 (Mathematics of Operations Research, 37, pages 608-625) Hiroki Nishimura, Efe A. Ok obtained results on solvability of variational inequalities on Hilbert lattices. Their approach was lattice-theoretic and was not based on topological fixed point theorems. This approach helped them to avoid making assumptions on the set-valued mapping to be hemicontinuous or monotonic. Also, the same authors obtained results on the maximum and minimum solutions of variational inequalities on Banach lattices (Hiroki Nishimura and Efe A. Ok, Optimal solutions to variational inequalities on Banach lattices, J. Math. Anal. Appl. 388 (2012) 1157–1165). In this paper we extend the scope of the previous study with the help of variational characterization of the generalized metric projection operator and the order theoretic fixed point theory. (Received April 13, 2017)