1133-06-29 **Jinlu Li*** (jli@shawnee.edu), 940 Second St., Portsmouth, OH 45662. *Fixed Point Theorems on Partially Ordered Banach Spaces and Applications.* Preliminary report.

In 1955, Tarski proved the first fixed point theorem on chain-complete lattice for single-valued mappings that initiated a new custom in fixed point theory, in which there are some ordering relations on the underlying spaces, such as, preorder, partial order, or lattice. The underlying spaces are not required to be equipped with a topological structure. To guarantee the existence of fixed points, the considered mappings should satisfy some order-monotonic conditions and it is unnecessary for them to have any continuity property. Some fixed point theorems have been obtained on partially ordered Banach spaces, in which, the continuity of the considered mappings may not be required. When we solve some problems on partially ordered Banach spaces, the ordering structures will provide new powerful tools. The fixed point theorems on posets and on partially ordered Banach spaces have been applied in game theory, economic theory with incomplete utilities and in solving integral equations, vector variational inequalities, ordered variational inequalities, and ordered Nesh equilibrium problems. (Received May 29, 2017)