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Wladyslaw Kulpa and **Andrzej Szymanski***, Department of Mathematics, Slippery Rock University of Pennsylvania, Slippery Rock, PA 16057. *L*-structures and Nash equilibrium theorems*. Preliminary report.

We introduce a convexity structure using L^* -operators. The induced class of L^* -spaces generalizes both the class of simplicial spaces introduced by Kulpa and the class of L -spaces introduced by Ben-El-Mechaiekh, Chebbi, Florenzano, and Llinares, which they modelled on G -structures of Park and Kim. It is a proper generalization for we show that a certain Souslin line is neither a simplicial space nor an L -space. The main result of this paper is a theorem called the Theorem on Signatures. It encompasses a number of theorems that deal with fixed points of families of functions. We derive from it the existence of Nash equilibrium points on the product of L^* -spaces. We also derive the existence of symmetric equilibrium points for games played on compact Hausdorff L^* -spaces. (Received September 04, 2007)