1065-46-229 **Mikhail Popov*** (popovm@muohio.edu), Miami University, Department of Mathematics, Oxford, OH 45056. *Some open problems on narrow operators.*

The most classes of operators which are not isomorphic embeddings, more or less are characterized by some "smallness" condition. Narrow operators are those operators defined on function spaces which are "small" at signs, i.e. at $\{-1, 0, 1\}$-valued functions. The idea to consider such operators has led to interesting problems which can be applied to Geometric Functional Analysis. To some extand, narrow operators generalize the notion of compact operators. Nevertheless, there are "very" non-compact narrow operators. One of the most interesting things is that if an r.i. function space E on $[0, 1]$ has an unconditional basis then every (continuous linear) operator on E is a sum of two narrow operators, since the sum of two narrow operators on L_1 is narrow. To explane this phenomena, the notion of narrow operators was recently extended to vector lattices. One deep result asserts that, under some natural assumptions on Banach lattices E, F, the set of all narrow regular operators from E to F is a band in the lattice of all regular operators from E to F. Since on L_1 all operators are regular, this clarifies the phenomena. The talk is planned to be devoted to the most interesting problems concerning narrow operators related to the Geometry of Banach Spaces. (Received September 14, 2010)