THE SUPREMA OF SELECTOR PROCESSES

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As a part of the study of the suprema of the selector processes, in 2010 Talagrand stated the following question. Is it true that the set of points on a discrete cube where the value of the supremum of linear functionals exceeds a certain level is "small"? A small set is a set that can be contained in a union of "simple" sets such that sum of their probabilities with respect to the uniform probability on the cube is smaller than half. J. Park and H. T. Pham recently solved this problem. We will show a sketch of a simpler proof of this fact. We will also discuss the meaning of this problem, its potential applications, and its consequences. The talk is based on the joint work with W. Bednorz (University of Warsaw) and R. Martynek (University of Luxembourg).