Balanced McNaughton Functions

Tomáš Kroupa

Department of Mathematics

University of Milan

We will present a problem motivated by the construction of robust and balanced Boolean function by Linial and Ben-Or. The goal is to describe the class of McNaughton functions/$\mathbb{Z}$-maps that transform uniform random inputs to a uniform random output. The special cases of such maps are $\mathbb{Z}$-homeomorphisms of the unit cube, which preserve the Lebesgue measure. In the talk we will formulate a necessary and sufficient condition for balancedness of McNaughton function (found by Panti) and show some refinements to this theorem.