ON ANTIRAMSEY COLORINGS AND GEOMETRY OF BANACH SPACES

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With every coloring $c\colon [\omega_1]^2 \to \{0,1\}$ we shall associate some nonseparable Banach space $\mathcal{X}_c$. The talk will focus on the following problem: how to translate various combinatorial properties of the coloring c into geometric properties of the space $\mathcal{X}_c$. We will show, among others, that while MA + $\neg$ CH implies that the geometry of the spaces $\mathcal{X}_c$ is quite regular, some interesting phenomena occur when c has some strong antiramsey properties (so strong that the existence of such c is independent of ZFC). The talk is based on a joint work with Piotr Koszmider.