The smallest σ-algebra closed under continuous images

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Abstract

We study the smallest σ-algebra $\mathcal{A}$ on $\mathbb{R}$ containing the open sets and closed under continuous images and its regularity properties. In particular, we study the question of whether infinite perfect-information, two-player, zero-sum games with payoff in $\mathcal{A}$ are determined and link this question to the existence of models of set theory satisfying strong forms of the axiom of infinity.