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On the minimal cardinality of a subset of $\mathbb{R}$ which is not of first category. (English)

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Summary: Let $\mathcal{M}$ be the ideal of first category subsets of $\mathbb{R}$ and $\mathrm{non}(\mathcal{M}) = \min\{\mathrm{card}\ X : X \subseteq \mathbb{R}, x \notin \mathcal{M}\}$. We consider families Φ of sequences converging to ∞, with the property that for every open set $U \subseteq \mathbb{R}$ that is unbounded above there exists a sequence belonging to Φ, which has an infinite number of terms belonging to U. We present assumptions about Φ which imply that the minimal cardinality of Φ equals $\mathrm{non}(\mathcal{M})$.

Keywords : first category subsets of $\mathbb{R}$

Classification :

$*$03E05 Combinatorial set theory (logic)

26A03 Elementary topology of the real line

Cited in ...