I Congresso Brasileiro de
Jovens Pesquisadores em
Matemática Pura e Aplicada

CH implies a compact space K is metrizable if $K^2 \setminus \Delta$ is dominated by the irrationals

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Resumo

A space X has a $\mathbb{P}$-diagonal if $X^2 \setminus \Delta$ is covered (dominated) by a family of compact sets $\{K_f : f \in \omega^\omega = \mathbb{P}\}$ satisfying that $K_f \subset K_h$ whenever $f \leq h$ (coordinatewise).

In their paper, Cascales, Orihuela and Tkachuk proved that under MA(ω_1) a compact space X has a $\mathbb{P}$-diagonal iff it is metrizable. We will prove the following:

CH implies that every compact space with a $\mathbb{P}$-diagonal is metrizable.

Referências

[1] T. Eisworth, *Countable compactness, hereditary π-character, and the continuum hypothesis*, Topology Appl. **153**:18 (2006), 3572–3597.

[2] B. Cascales, J. Orihuela and V. V. Tkachuk, *Domination by second countable spaces and Lindelöf Σ-property*, Topology Appl. **158**:2 (2011), 204–214.