Large Lindelöf spaces with points G_δ

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Resumo

We introduce a simple construction of Lindelöf spaces with points G_δ. Using this construction, we prove the following: Suppose either (1) there exists a regular Lindelöf P-space of pseudocharacter $\leq \omega_1$ and size $> 2^\omega$, (2) CH holds and there exists a Kurepa tree, or (3) CH and $\square(\omega_2)$ hold. Then there exists a regular Lindelöf space with points G_δ and size $> 2^\omega$. This means that the non-existence of large regular Lindelöf spaces with points G_δ is a large cardinal property.