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On butterfly-points in βX , Tychonoff products and weak Lindelöf numbers

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Abstract: Let X be the Tychonoff product $\prod_{\alpha < \tau} X_\alpha$ of τ -many Tychonoff non-single point spaces X_α . Let $p \in X^*$ be a point in the closure of some $G \subset X$ whose weak Lindelöf number is strictly less than the cofinality of τ . Then we show that $\beta X \setminus \{p\}$ is not normal. Under some additional assumptions, p is a butterfly-point in βX . In particular, this is true if either $X = \omega^\tau$ or $X = R^\tau$ and τ is infinite and not countably cofinal.

Keywords: Butterfly-point; non-normality point; Čech–Stone compactification; Tychonoff product; weak Lindelöf number

AMS Subject Classification: 54D15, 54D35, 54D40, 54D80, 54E35, 54G20

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