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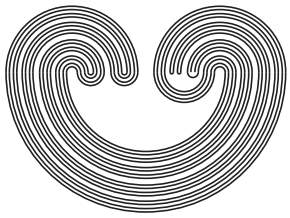

Some notes on Lindelöf spaces and P-sets

by

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SOME NOTES ON LINDELÖF SPACES AND P-SETS

RONNIE LEVY

In memory of Gary Gruenhage, a terrific mathematician and a truly good person

A few years ago Gary e-mailed me when he found out that we had the same middle name. He suggested that we write a paper together using that name. One subject that I thought might be interesting arose from a paper Alan Dow and I had written ([DL]). Although Gary and I never got around to writing a joint paper on that topic, that exchange got me thinking about P-points and P-sets. (This topic might be appropriate in light of the joke that Peg Daniels relates in her article in this volume.) The notes below are really an excuse to ask some questions which arose in that context.

1. Some definitions

All spaces discussed are assumed to be completely regular and Hausdorff. If X is a space, a subset S of X is a *P-set* if every G_δ set of X which contains S also contains a neighborhood of S. If $x \in X$ and $\{x\}$ is a P-set of X, then x is called a *P-point*. If every point of the space X is a P-point, that is, if every G_δ set is open, then X is a *P-space*. The space X is an *almost P-space* if the interior of every non-empty G_δ is non-empty. A space X is *ω-bounded* if every countable subset of X has compact closure in X, and X is *strongly ω-bounded* if every σ-compact subset of X has compact closure in X. The Stone-Čech compactification

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