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On the subsets of non locally compact points of ultracomplete spaces

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Abstract: In 1998, S. Romaguera [13] introduced the notion of cofinally Čech-complete spaces equivalent to spaces which we later called ultracomplete spaces. We define the subset of points of a space X at which X is not locally compact and call it an nlc set. In 1999, García-Máynez and S. Romaguera [6] proved that every cofinally Čech-complete space has a bounded nlc set. In 2001, D. Buhagiar [1] proved that every ultracomplete GO-space has a compact nlc set. In this paper, ultracomplete spaces which have compact nlc sets are studied. Such spaces contain dense locally compact subspaces and coincide with ultracomplete spaces in the realms of normal γ -spaces or ks-spaces.

Keywords: locally compact, ultracomplete, Čech-complete, countable character, bounded set

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