J. Gerlits, I. Juhász, Z. Szentmiklóssy Two improvements on Tkačenko's addition theorem

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Abstract: We prove that (A) if a countably compact space is the union of countably many D subspaces then it is compact; (B) if a compact T_2 space is the union of fewer than $N(\mathbb{R}) = cov(\mathcal{M})$ left-separated subspaces then it is scattered. Both (A) and (B) improve results of Tkačenko from 1979; (A) also answers a question that was raised by Arhangel'skii and improves a result of Gruenhage.

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