Box and nabla products that are D-spaces

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It is a well known open problem whether paracompact spaces are D. The even more famous box product problem, on the other hand, is concerned with when box or nabla products are paracompact. We will present results showing that many box and nabla products are D-spaces, indeed quite often hereditarily D. This will include most cases where it is known the box or nabla product is paracompact.

Here a space X is D if for every assignment, U, of an open neighborhood to each point x in X there is a closed discrete E such that $\bigcup\{U(x) : x \in E\} = X$. The box product, $\Box X^\omega$, is X^ω with topology generated by all $\prod_n U_n$, where every U_n is open. The nabla product, ∇X^ω, is obtained from $\Box X^\omega$ by quotienting out mod-finite.

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