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Direct Sums and the Schur Property

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Abstract: It is a known fact that ℓ^1, the dual space of the null sequences c_0, has the Schur property, that is, weakly convergent sequences in ℓ^1 are norm convergent. In this paper, we prove that if $(X_\alpha)_{\alpha \in I}$ are Banach spaces and $X = (\oplus_{\alpha \in I} X_\alpha)_1$ their l_1-sum, then the space X has the Schur property iff each factor X_α has it.

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