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A note on regular methods of summability and the Banach-Saks property. (In English)

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The following theorem is proved. Let A be a regular summability matrix. Then every bounded sequence of elements in the space has a subsequence with the property that either every subsequence of this subsequence is summable by A to one and the same limit or no subsequence of this is summable by A. In the proof a result of *F.Galvin* and *K.Prikry* on partion into Borel sets [J. Symb. Logic 38, 193-198 (1973; Zbl 276.04003)] is used. A Banach space is said to possess Banach-Saks property with respect to A, if every bounded sepuence has a summable subsequence. It follows from the result above that if a Banach space has the Banach-Saks property with respect to A, then every bounded sepuence has a subsequence such that each of its subsequences is summable with respect to A.

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Classification:
40C05 Matrix methods in summability
46B15 Summability and bases in normed spaces