THE BAIRE CATEGORY OF IDEAL CONVERGENT SUBSERIES AND REARRANGEMENTS OF A DIVERGENT SERIES

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These are results obtained together with Michał Popławski and Artur Wachowicz. Let $\mathcal{I}$ be a 1-shift-invariant ideal on $\mathbb{N}$ with the Baire property. Assume that a series $\sum_n x_n$ with terms in a real Banach space X is not unconditionally convergent. We show that the sets of $\mathcal{I}$-convergent subseries and of $\mathcal{I}$-convergent rearrangements of a given series are meager in the respective Polish spaces. A stronger result, dealing with $\mathcal{I}$-bounded partial sums of a series, is obtained if X is finite-dimensional. We apply the main theorem to series of functions with the Baire property, from a Polish space to a separable Banach space over $\mathbb{R}$, under the assumption that the ideal $\mathcal{I}$ is analytic or coanalytic.

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