THE P-IDEAL DICHOTOMY AND SOME APPLICATIONS

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The P-ideal dichotomy (PID) is a combinatorial principle first considered by Abraham and Todorcevic and generalized by the latter. It follows in its full generality from the Proper Forcing Axiom (PFA) and there are weaker versions which are consistent relative to ZFC. It becomes especially powerful when combined with some assumption on small cardinals.

We will present the background and some applications of the PID to Topology and Functional Analysis. We intend to give an idea of the proof of the following two results of Todorcevic. Assuming PID and $\mathfrak{p} > \omega_1$:

- there are no S-spaces;
- every nonseparable Banach space has an uncountable biorthogonal system.

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