On the theory of $\mathbf{\Pi}^1_5$ sets.

Kechris and Martin proved, assuming the axiom of determinacy, that the collection of $\mathbf{\Pi}^1_3$ sets is closed under $<\boldsymbol{\delta}^1_3$ length unions and interscetions. In fact, they proved a stronger lightface version from which the boldface version follows. We extend these results to $\mathbf{\Pi}^1_5$ sets, and indicate how to generalize to all $\mathbf{\Pi}^1_{2n+1}$.

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