A TOPOLOGICAL CHARACTERIZATION OF $\min\{\mathfrak{r}, \mathfrak{d}\}$

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We shall discuss the characterization of $\min\{\mathfrak{d}, \mathfrak{r}\}$ stating that it is the minimal cardinality κ such that for any countable disjoint $Q_0, Q_1 \subset 2^\omega$ there exists a cover $\mathcal{K}$ of 2^ω by its closed subsets such that $|\mathcal{K}| \leq \kappa$ and for each $K \in \mathcal{K}$ there exists $i \in 2$ with $K \cap Q_i = \emptyset$. We shall present some consequences of this characterization, e.g., that the Menger covering property is not productive under $\mathfrak{d} \leq \mathfrak{r}$, which was earlier established by Tsaban and Szewczak using a different approach.

The talk will be based on a joint work with R. Pol and P. Zakrzewski.