IDEAL EQUAL BAIRE CLASSES

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Let $\mathcal{I}$ and $\mathcal{J}$ be ideals on ω. We say that a sequence $(f_n)_{n\in\omega} \subseteq \mathbb{R}^X$ is $(\mathcal{I}, \mathcal{J})$-*equal convergent* to some $f \in \mathbb{R}^X$ if there is a sequence $(\varepsilon_n)_{n\in\omega}$ of positive reals $\mathcal{J}$-convergent to 0 (i.e., $\{n \in \omega : |\varepsilon_n| \geq \varepsilon\} \in \mathcal{J}$ for any $\varepsilon > 0$) such that $\{n \in \omega : |f_n(x) - f(x)| \geq \varepsilon_n\} \in \mathcal{I}$ for each $x \in X$.

For any Borel ideal on ω we characterize ideal equal Baire system generated by the family of continuous functions, i.e., the family of ideal equal limits of sequences of continuous functions.

What is more, we characterize a similar system generated by quasi-continuous functions (a function $f \in \mathbb{R}^X$ is quasi-continuous if for every $x_0 \in X$, $\varepsilon > 0$ and every open neighbourhood U of x_0 there is an open non-empty set $V \subseteq U$ such that $|f(x) - f(x_0)| < \varepsilon$ for all $x \in V$).

This is a joint work with dr. Marcin Staniszewski.