Real Analysis Exchange
Summer Symposium XXXX, 2016, pp. 1–1

Tomasz Natkaniec, Institute of Mathematics, University of Gdańsk, ul. Wita Stwosza 57, 80-952 Gdańsk, Poland. email: mattn@mat.ug.edu.pl

ON THE DISCRETE IDEAL CONVERGENCE OF SEQUENCES OF QUASI-CONTINUOUS FUNCTIONS

All results presented here were obtained jointly with Piotr Szuca.

The notion of discrete convergence of a sequence of real functions was introduced by Császár and Laczkovich [Studia Sci. Math. Hungar., **10**, no. 3 (1975), 463–472]. Z. Grande [Acta Math. Hungar., **92** (2001), 39–50] characterized discrete Baire classes generated by the family $\mathcal{QC}$ of quasi-continuous real-valued functions defined on a metric Baire space. In our work we consider an ideal version of this theorem: for an ideal $\mathcal{I}$ we describe the discrete $\mathcal{I}$-Baire system generated by the family $\mathcal{QC}$. This description can be different for different ideals $\mathcal{I}$, e.g. for the ideal FIN of all finite sets (the classical case) and for the ideal $\mathcal{I}_d$ of asymptotic density zero sets (the statistical convergence). Our goal is to describe Borel ideals $\mathcal{I}$ for which ideal and ordinary discrete Baire systems coincide. This work is a continuation of our previous investigations from [Fund. Math. **232** (2016), 269–280], where we consider analogous results for a pointwise $\mathcal{I}$-convergence. Recently A. Kwela and M. Staniszewski proved analogous results for quasi-normal $\mathcal{I}$-convergence.

Mathematical Reviews subject classification: Primary: 40A35; Secondary: 40A30, 54C30
Key words: pointwise convergence, discrete convergence, quasi-normal convergence, quasi-continuous function, ideal convergence, ω-+-diagonalizable filter