# Seminarium geometrów

Czwartek, 22.12.2022, 17:00 WS

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## Perfect matchings in hyperfinite graphings

Abstract: The talk will focus on recent results on measurable perfect matchings in hyperfintie graphings. We will start by defining hyperfinite graphings and recall some motivations behind this definition, such as the Benjamini-Schramm limits and hyperfinite sequences of graphs. As the main result we will discuss the recent theoremt saying that every regular hyperfinite one-ended bipartite graphing admits a measurable perfect matching. We will see some applications of this results, answering several questions in the field. For instance we will characterize the existence of factor of iid perfect matchings in bipartite Cayley graphs, extending a result of Lyons and Nazarov. We will also answer a question of Bencs, Hruskova and Toth arising in the study of balanced orientations in graphings. Finally, we see how the results imply the measurable circle squaring. This is joint work with Matt Bowen and Gabor Kun.