



Der Wissenschaftsfonds.



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## Online talk series

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It is a pleasure to announce a guest lecture with the title

# Analysis on Hamming cube with Banach space targets (solution of Enflo's problem and more). Part 2

**SPEAKER:** Volberg Alexander

**TIME:** Wednesday, 01.07.2020, 04:00 pm.

**Abstract:** A nonlinear analogue of the Rademacher type of a Banach space was introduced in classical work of Enflo. The key feature of Enflo type is that its definition uses only the metric structure of the Banach space, while the definition of Rademacher type relies on its linear structure.

In the joint paper with Paata Ivanisvili and Ramon Van Handel we prove that Rademacher type and Enflo type coincide, settling a long-standing open problem in Banach space theory. The proof is based on a novel dimension-free analogue of Pisier's inequality on the discrete cube, which, in its turn, is based on a certain formula that we used before in improving the constants in scalar Poincaré inequality on Hamming cube. I will also show several extensions of Pisier's inequality (originally considered by Hytner and Naor) with ultimate assumptions on a Banach space structure.

In the second part of the presentation I will talk about singular integrals on Hamming cube and about two approaches: Lust-Piquards approach via non-commutative random variable and another approach using Bellman function technique.

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