ZRUŠENO

Mathematics, Physics & Computer Science Seminar Series

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Tamar Ziegler

Sign patterns of the Mobius function

The Mobius function is one of the most important arithmetic functions. There is a vague yet well known principle regarding its randomness properties called the “Mobius randomness law". It basically states that the Mobius function should be orthogonal to any "structured" sequence. P. Sarnak suggested a far reaching conjecture as a possible formalization of this principle. He conjectured that "structured sequences" should correspond to sequences arising from deterministic dynamical systems. Sarnak’s conjecture follows from Chowla’s conjecture - which is the mobius version of the prime tuple conjecture. I will describe progress in recent years towards these conjectures, building on major advances dynamics, additive combinatorics, and analytic number theory.

Tamar Ziegler is an Israeli mathematician known for her work in ergodic theory, combinatorics and number theory. She received her Ph.D. from the Hebrew University in 2003 under the supervision of Hillel Furstenberg.
She was a faculty member at the Technion Institute of Technology until 2013, and is currently the Henry and Manya Noskwith Chair of Mathematics at the Einstein Institute of Mathematics at the Hebrew University.
She held visiting professorships at Stanford university in 2012-13, at MSRI in 2017, and was a distinguished visiting professor at the IAS in Princeton in 2022-23. Ziegler received the Alon Fellowship and the Ostrowski Fellowship in 2008, the Erdos Prize in 2011, the Bruno memorial award in 2015. She was the European Mathematical Society lecturer of the year in 2013, and an invited speaker at the 2014 International Congress of Mathematicians. She was elected to Academia Europaea in 2021.