

INSTITUTUL DE MATEMATICĂ “SIMION STOILOW” AL ACADEMIEI ROMÂNE

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Conferința lunară

***The distribution of rational numbers
and measure-preserving transformations***

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Abstract: Rational numbers in $[0,1)$, or equivalently roots of unity on the unit circle, can be ordered either by the size of denominators (Farey sequence), or by the sum of digits in their continued fraction representation (Stern-Brocot array). They are not randomly distributed in any of these two filtrations. Their distribution turns out to be dictated by four different types of measure-preserving transformations (Gauss, Farey, Stern-Brocot, Newman), which can be defined in an way and have interesting ergodic properties. Our talk, aimed for a broad audience, will discuss this type of connections between number theory and ergodic theory.