УДК 511.7

ESSENTIALLY NONNORMAL NUMBERS
FOR RANDOM CANTOR SERIES EXPANSIONS

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A real number x is essentially non-normal in base b if no digit of it's b-ary expansion has a relative frequency. The set of essentially nonnormal numbers in base b is known have full Hausdorff dimension. We improve this result of Albeverio, Pratsiovytyi, and Torbin in the following way.

1. We require that no blocks of digits have a relative frequency.

2. All numbers formed by writing digits along any arithmetic progression also have no blocks with a relative frequency.

3. We consider a large class of Cantor series expansions which include the classical b-ary expansions and periodic Cantor series expansions as special cases. This class of bases has full measure for shift invariant ergodic probability measures on satisfying a mild condition.

For basic sequences satisfying our condition, we proved that the set of numbers satisfying the first and second properties has full Hausdorff dimension. Part of the novelty of this proof is the use of recently established properties by Vandehey of continued fraction normal numbers sampled along arithmetic progressions.

The talk is based on joint work with William Mance (IMPAN).

СУТТЄВО АНОРМАЛЬНІ ЧИСЛА
ЗАДАНІ РОЗКЛАДОМ У ВИПАДКОВИЙ РЯД КАНТОРА

У доповіді буде розглянуто питання властивостей множини суттєво анормальних чисел, заданих випадковим рядом Кантора. Зокрема, буде показано, що така множина є множиною повної розмірності Хаусдорфа-Безиковича, тобто є суперфрактальною.