

Pseudorandom binary sequences: quality measures and number-theoretic constructions

Arne Winterhof (RICAM, Linz)

In this talk we summarize properties of pseudorandomness and non-randomness of some number-theoretic sequences and present results on their behaviour under the following measures of pseudorandomness:

- balance,
- linear complexity,
- correlation measure of order k ,
- expansion complexity,
- 2-adic complexity.

The number-theoretic sequences are the

- Legendre sequence and the two-prime generator,
- the Thue-Morse sequence and its sub-sequence along squares,
- the prime omega sequences for integers and polynomials.

References

- [1] A. Winterhof, Pseudorandom binary sequences: quality measures and number theoretic constructions. *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, Bd. E106-A (12) (2023), 1452–1460.