

# Four applications of $\mathbb{Z}_4$ -codes

Patrick Solé

We survey the four main applications of  $\mathbb{Z}_4$ -codes in the nineties: low correlation sequences [5], nonlinear binary codes [4], lattices [1, 2], combinatorial designs [3]. The results include but are not limited to

- the first quaternary sequence meeting the Sidelnikov bound
- the formal duality of Kerdock and Preparata Codes
- the simplest construction of the Leech lattice known to date
- new 5-designs on 24 points besides the Witt designs

We give pointers to more recent trends like OFDM and space time codes.

## References

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*CNRS-I3S, ESSI, route des Colles, 06903 Sophia Antipolis, France*

*email: sole@essi.fr*