

Low Degree Sets in Finite Geometry

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Consider a 0, 1-valued (Boolean) function on the hypercube $\{0, 1\}^n$, that is $f : \{0, 1\}^n \rightarrow \{0, 1\}$. One can write f as a real, multilinear polynomial of degree at most n . Boolean functions on the hypercube with bounded degree d are well understood. Here we are concerned with generalizations to other domains than $\{0, 1\}^n$, mostly subspaces of finite vector spaces.

The talk will be based on results in [1, 2, 3].

References

- [1] J. De Beule, J. D'haeseleer, J. Mannaert, F. Ihringer, Degree 2 Boolean Functions on Grassmann Graphs, in preperation.
- [2] Y. Filmus and F. Ihringer, Boolean degree 1 functions on some classical association schemes, *J. Combin. Theory Ser. A* **162** (2019) 241–270.
- [3] Y. Filmus and F. Ihringer, Boolean constant degree functions on the slice are juntas, *Discrete Math.* **342**(12) (2019) 111614.