

ON DEFINABLE GROUPS AND FIELDS IN CERTAIN TOPOLOGICAL FIELDS EQUIPPED WITH A GENERIC DERIVATION

In this talk, we will show how to adapt the description obtained in [2] of finite-dimensional definable groups in certain differential expansions of p -adically closed fields (expansions where the derivation has a generic behaviour) in the class of open topological large fields introduced in [1].

Then using the Malcev correspondence between groups and fields we derive a description of finite-dimensional definable fields in the same setting and also in certain certain dense pairs of fields. This part is a joint work with P. Eleftheriou and E. Kaplan.

Finally we observe that one can use Feferman-Vaught techniques to identify existentially closed pairs of, for instance, von Neumann regular f -rings.

REFERENCES

- [1] Cubides Kovacsics P., Point F., Topological fields with a generic derivation, *Annals Pure and Applied Logic* 174 (2023), paper No. 103211.
- [2] Peterzil K., Pillay, A. Point F., On definable groups and D -groups in certain fields with a generic derivation, arXiv:2305.16747.