

FRANÇOISE POINT

PHD'S IN LOGIC

Various notions of minimality arising in model theory. (I)

We will examine various notions of minimality such as (strong) minimality, o -minimality, C -minimality, p -minimality.

Then, we will introduce the notion of geometric structures and for these, the trichotomy principle due to B. Zil'ber, on the geometry of definable subsets.

Finally, for an o -minimal structure $\mathcal{M} = (M, <, \dots)$, we will try to give the flavour of the trichotomy theorem due to K. Peterzil and S. Starchenko saying that for any $a \in M$, either a is *trivial*, or a has a convex neighbourhood on which \mathcal{M} induces the structure of an ordered vector space, or a is contained in an open interval on which \mathcal{M} induces the structure of an expansion of a real-closed field.

On groups definable in o -minimal structures. (II)

We will give some aspects of the proof of the following Pillay's conjecture (which has been now proven in almost full generality).

Let G be a definable group in a sufficiently saturated o -minimal structure. Then there exists a smallest type-definable normal subgroup G^{00} such that G/G^{00} is a compact real Lie group, whose Lie dimension is equal, in the case where G is definably compact, to the o -minimal dimension of G .