RÉSUMÉS DES EXPOSÉS

SLAAG - 4 MAI 2026

Marcus Tressl : *Constructions of differentially large fields*

A differentially large field (in this talk) is a differential field K (i.e. a field equipped with a single derivation d) of characteristic 0 such that K solves all systems of algebraic differential equations defined over K, that are solvable in $K((t))$ (equipped with the natural extension of the derivation d). Examples are differentially closed fields and closed ordered differential fields in the sense of Singer. I will describe some concrete constructions of such fields (previously unknown already for differentially closed fields) and show how one can manufacture such fields with prescribed fields of constants. For example there is a derivation on the real field turning the real field into a differentially large field such that all constants are algebraic numbers. If time permits I will give some applications, e.g. to prime models and constructions of logarithms. (Joint work with Omar Leon Sanchez, `https://arxiv.org/abs/2307.12977`)