

Geometric Aspects of Model Theory

(aprox. 10 hour course)

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I. Principles of geometric stability theory and classification of formal theories

1. dimensions and ranks
2. saturation and homogeneity
3. types: syntactic and Galois
4. beyond first-order languages
5. the landscape of mathematics and the classification grid

II. Algebra/geometry and syntax/semantics dualities

1. the idea of co-ordinatisation in geometry and model theory
2. the trichotomy principle and the special role of fields (ACF, RCF, DCF,...)
3. manifold, varieties, charts and ringed spaces
4. affine algebras and affine varieties: algebraic syntax and geometric semantics
5. principles of non-commutative geometry: quantum algebras and quantum Zariski geometries
6. schemes and varieties in algebraic geometry via syntax and semantics

III. Positive model theory

1. languages and formulas in PMT
2. the generalised Zariski topology
3. morphisms in PMT
4. model completeness

The course will take place on **Mondays**, from **3:30pm to 5pm** in room **C6.2.33 of Faculdade de Ciências da Universidade de Lisboa**. The first session is in **October 14**.

[Please notice that some Mondays may be skipped and other special arrangements can be made. Please get in touch with Mário Edmundo at mjedmundo@fc.ul.pt for extra information.]