

**Talk: Real algebraic geometry and computations, an intricated history**

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**Abstract**

The talk concentrates on two main algorithmic problems :

- count the number of real roots of a polynomial, and various generalizations leading to quantifier elimination,
- express a positive polynomial as a sum of squares: from a non-constructive proof to an elementary recursive solution to Hilbert 17th problem.

Two main issues for both these problems are effectivity and complexity.