BORIS ZILBER, Pseudo-analytic structures: model theory and algebraic geometry. Mathematical Institute, University of Oxford, 24-29 St Giles, Oxford, OX1 3LBm UK. E-mail: zilber@maths.ox.ac.uk.

This is a survey of developments around construction of pseudo-analytic structures such as the analogue of the complex numbers with exponentiation. Model-theoretic ingredients are Hrushovski's construction of unusual stable structures, Shelah's theory of excellence in abstract elementary classes and the theory of Zariski structures.

The connection to algebraic geometry and number theory involves a very general form of Schanuel's conjecture as well as Diophantine conjectures around mixed Shimura varieties.