On algebraic and diophantine geometry in characteristic 1

Abstract:
I will start with a motivation of what algebraic (and model-theoretic) properties an algebraically closed field of characteristic 1 is expected to have. Then I will explain how a search of similar properties lead to a well-known now Hrushovski's construction and then formulate very precise properties that such a construction produces and so the field must satisfy. The axioms have a form of diophantine and valuation-theoretic statements in positive characteristics and the consistency of those remain an open problem. A special case of the axioms has been confirmed by a theorem of F.Bogomolov.