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A long story of eliminated quantifiers

This talk is about many recent applications of classical theorems from Model Theory known as 'quantifier elimination' results. The first examples of such results go back to the work of Tarski in the 1930s, and Ax-Kochen in the 1960s. In the current century, these ideas found far-reaching applications, including the proof of many cases of the Andre-Oort conjecture in Number Theory. With the development of a theory called Motivic Integration, further applications of these ideas were developed ranging from Algebraic geometry to the theory of Automorphic forms. I will survey the foundational idea of quantifier elimination, and then focus on its application to the study of properties of a certain class of morphisms between algebraic varieties, and then an application of these properties in representation theory (this part is based on the work of I. Glazer and Y. Hendel).