Title: Algebraic Curves, Computer Algebra and Integrable Systems

Abstract: An important application of algebraic curves lies in the context of integrable systems via theta functions. They give rise, for instance, to solutions of the Kadomtsev-Petviashvili hierarchy, a universal integrable system. This talk aims to make an excursion into this study from the lens of computational algebraic geometry. The emphasis will be on exploiting modern tools in symbolic, numerical and combinatorial algebraic geometry to investigate such solutions and their applications back to the algebraic curves.