Frobenius algebras and integrable geodesic flows with quadratic integrals

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16:00-17:00h on campus in M.G.006
Analysis & Geometry Seminar, Antwerpen

The talk will be devoted to a recent solution of the long-standing Staeckel-Eisenhart problem in the non-diagonalisable case. Namely we will completely describe all integrable systems on T^*M with Poisson commuting functions of the form

$$F_i = \tfrac{1}{2}\, g(K_i\, p,p) \quad \text{with } i = 1,..., n$$

satisfying just one algebraic condition that the operators K_i commute in algebraic sense, i.e.

$$K_i\, K_j = K_j\, K_i.$$

Quite surprisingly, the solution essentially uses the concept of Frobenuis algebras and, of course, is based on recent developments in Nijenhuis geometry.