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On linear-quadratic Poisson pencils on $\mathfrak{gl}(3)$

In a recent paper Vladimir Sokolov introduces a three-parametric family of quadratic Poisson structures on $\mathfrak{gl}(3)$ each of which is compatible with the canonical linear Poisson bracket. The complete involutive family of polynomial functions related to these bi-Poisson structures contains the Hamiltonian of the so-called elliptic Calogero-Moser system, the quantum version of which is also discussed in the same paper.

We show that there exists a 10-parametric family of quadratic Poisson structures on $\mathfrak{gl}(3)$ compatible with the canonical linear Poisson bracket and containing the Sokolov family. The quantization matters will be also touched in this talk.

(The joint work with Ihor Mykytyuk.)
