Symplectic holomorphic automorphisms of Calogero–Moser spaces

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A Calogero–Moser space describes the completed phase space of a system of finitely many indistinguishable particles with a certain Hamiltonian with quadratic inverse potential in classical physics. Since the past two decades, these spaces are also an object of ongoing study in pure mathematics. In particular, a Calogero–Moser space of n particles is known to be a smooth complex-affine variety equipped with a symplectic holomorphic form, and to be diffeomorphic to the Hilbert scheme of n points in the affine plane.

We establish the symplectic holomorphic density property for the Calogero– Moser spaces and describe their group of symplectic holomorphic automorphisms.

Joint work with Gaofeng Huang.