Seminar/Talk

Positive monotone symplectic manifolds with symmetries and GKM spaces

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Positive monotone symplectic manifolds are the symplectic analogues of Fano varieties; namely, they are compact symplectic manifolds whose first Chern class coincides with the cohomology class of the symplectic form.In dimension six, if a positive monotone symplectic manifold admits a Hamiltonian circle action, a conjecture of Fine and Panov asserts that it is diffeomorphic to a Fano variety. More generally, the question of whether a positive monotone symplectic manifold with symmetries is homotopy equivalent, homeomorphic, diffeomorphic, or symplectomorphic to a Fano variety remains wide open.In this talk, I will report on recent results concerning positive monotone symplectic manifolds endowed with a special class of Hamiltonian torus actions, called GKM_3 actions. I will explain how these structures allow one to prove several finiteness results and quantitative bounds on the Chern numbers, therefore in particular, on the symplectic volume. The latter resembles the bound obtained by Kollr-Miyaoka-Mori for the volume of Fano varieties.

Thursday, June 11, 2026 01:15pm - 03:00pm
Sunstone Bldg / Ground floor / Big Seminar Room A / 27 seats (I23.EG.102)

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