

Mirror symmetry and KAM theory

Prof. Kenji Fukaya

(Simons Center for Geometry and Physics, Stony Brook University, USA)



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Through Zoom



Mirror symmetry is a phenomenon discovered in String theory and is much discussed recently in mathematics especially in the field of complex (algebraic) geometry and symplectic geometry. Strominger-Yau-Zaslow found that this phenomenon is closely related to a Lagrangian torus fibration. In an integrable system in Hamiltonian dynamics, the phase space is foliated by Lagrangian tori. I would like to explain a program that the Lagrangian torus fibration found by Strominger-Yau-Zaslow could be regarded as one appearing certain integrable system and KAM theory (which describes a Hamiltonian dynamics that is a perturbation of an integrable system) could appear in the situation of Mirror symmetry.

Type D_4 singular fiber

$$T_b^{\text{reg}} \cong (\mathbb{Z}_2)^2 \times \mathbb{C}$$

