

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
DEPARTMENT OF MATHEMATICS

**Geometric Analysis Seminar**  
*Special Session*

Thursday, September 30, 2021

4:00pm – 6:00pm      Room 2-131

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*(Rutgers)*

**“The Type IIA flow and its applications in symplectic  
geometry”**

**Abstract**

The equations of flux compactifications of Type IIA superstrings were written down by Tomasiello and Tseng-Yau. To study these equations, we introduce a natural geometric flow on symplectic Calabi-Yau 6-manifolds. We prove the well-posedness of this flow and establish the basic estimates. We show that the Type IIA flow can be applied to find optimal almost complex structures on certain symplectic manifolds. This is based on joint work with Phong, Picard and Zhang.