

SBU DEPARTMENT OF MATHEMATICS &  
INSTITUTE FOR MATHEMATICAL SCIENCES

# Colloquium

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## *Quaternionic Monge-Ampere equations on HKT manifolds*

The classical real and complex Monge-Ampere equations play a central role in several branches of geometry and analysis. In recent years there were a few attempts to generalize some of their common features to several new situations. In this talk we introduce quaternionic Monge-Ampere equation. More precisely we introduce a quaternionic version of the classical Calabi problem for Kahler manifolds (solved by Yau in 1978). It is a non-linear elliptic equation of second order on so called HyperKahler with Torsion (HKT) manifolds (these manifolds were introduced by physicists in 1990s). While in full generality the problem is unsolved, we will describe in the talk its solution in a special case and a few partial results towards its solution in the general case. Part of the results are joint with E. Shelukhin and M. Verbitsky.

Thursday - February 14, 2019  
Room Math Tower P-131      4:00 pm