NILPOTENT STRUCTURES AND COLLAPSING RICCI-FLAT METRICS ON K3 SURFACES

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111 Cummington Street, Boston

Tea: 3:45pm in Room B21

Abstract: In this talk I will describe a new gluing construction of collapsing families of Ricci-flat metrics on K3 surfaces. If the diameter is normalized to be equal to 1, then the Gromov-Hausdorff limit of these new families is the interval $[0, 1]$, but unlike in previously known constructions with limit space $[0, 1]$, the generic fiber of the collapse is a 3-dimensional Heisenberg nilmanifold rather than a 3-torus. The Riemann curvature tensor remains uniformly bounded along the collapse except in a finite number of highly localized regions, where Tian-Yau and Taub-NUT spaces bubble off. The Taub-NUT bubbles play a similar role as in Gross-Wilson's classical construction of collapsing Ricci-flat metrics on K3 with Gromov-Hausdorff limit space S^2. This is joint work with Song Sun, Jeff Viaclovsky, and Ruobing Zhang.

See `http://math.bu.edu/research/geom/seminar.html` or contact Yoosik Kim *yoosik@bu.edu* or Siu-Cheong Lau *lau@bu.edu* for more information.