BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

FEUTER SECTIONS AND Z_2-HARMONIC 1-FORMS

Saman Habibi Esfahani

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Abstract: This talk is based on joint work with Yang Li. I will discuss Fueter sections and related compactness problems, which arise in gauge theory, Floer theory, and calibrated geometry. Taubes suggested that counting Fueter sections on 3-manifolds could lead to new 3-manifold invariants, while Donaldson and Segal proposed counting them over special Lagrangians to define invariants of Calabi-Yau 3-folds. Similar counts also appear in G2 geometry. The central question in all of these proposals is whether the space of Fueter sections is compact. We address this question in certain cases, proving and disproving several conjectures in the field and, in particular, answering a question raised by Taubes in 1999. A key observation is that Z2-harmonic forms play a crucial role in the problem.

See `http://math.bu.edu/research/geom/seminar.html` or contact Yu-Shen Lin (*yslin@bu.edu*) or Brian Williams (*bwill22@bu.edu*) for more information.