

Northern California Symplectic Geometry Seminar

BERKELEY – DAVIS – SANTA CRUZ – STANFORD

Monday, March 3rd, 2014, at STANFORD

2:30–3:30, room 383N

Nate Bottman (MIT)

Symplectic convolution and strip-shrinking

Abstract: If $\Lambda \subset (M \times N, (-\omega_M) \oplus \omega_N)$ is a Lagrangian correspondence, then Wehrheim–Woodward construct an A_∞ -functor $F_\Lambda^\# : Fuk(M) \rightarrow Fuk^\#(N)$ that sends $L \subset M$ to the formal composition (L, Λ) . In work-in-progress with Katrin Wehrheim, we aim to construct an A_∞ -functor $F_\Lambda : Fuk(M) \rightarrow Fuk(N)$ that sends $L \subset M$ to the geometric composition $L \circ \Lambda \subset N$, and is defined on the morphism level in terms of singular quilts. These singular quilts have the same sort of singularity as figure eight bubbles, which appear in the analysis of strip-shrinking. Toward a Fredholm theory for these singular quilts, we prove a collection of elliptic estimates, two consequences of which are a Gromov compactness theorem for strip-shrinking and a removal of singularity for figure eight bubbles.

3:30–4:00 — Tea Break, 2nd floor lounge

4:00–5:00, room 383N

Yu-Shen Li (Stanford)

Reduced Open Gromov-Witten Invariants on HyperKahler Manifolds

Abstract: In this talk, we will use hyperKahler geometry to define the reduced open Gromov-Witten invariants on hyperKahler manifolds. These invariants can have non-trivial wall-crossing phenomenon and are expected to be the generalized Donaldson-Thomas invariants in the construction of hyperKahler metric due to Gaiotto-Moore-Neitzke. As an application, these invariants can help to establish a correspondence between holomorphic discs and tropical discs. The invariant can also help to study certain discs counting invariants for Calabi-Yau 3-folds with K3 fibration.

There will be a dinner at 6:00

—D. Auroux, Y. Eliashberg, D. Fuchs, V. Ginzburg, M. Hutchings, E. Ionel, R. Montgomery, K. Wehrheim, A. Weinstein