

Northern California Symplectic Geometry Seminar

BERKELEY – DAVIS – SANTA CRUZ – STANFORD

Monday, May 8, 2006

BERKELEY, Evans Hall

2:30–3:30, Room 47

Yvette Kosmann-Schwarzbach (École Polytechnique, Palaiseau)

Twisted Poisson structures and modular classes in Lie algebroid theory

The modular classes of Poisson manifolds were shown by Evens, Lu and Weinstein to be (one-half of) the modular class of their cotangent Lie algebroid. Introducing the relative modular classes of Lie algebroids, we extend this result to the Poisson and twisted Poisson structures of Lie algebroids. If time permits, we shall discuss additional properties of the relative modular classes. (Joint work with Camille Laurent-Gengoux and Alan Weinstein.)

3:30–4:00, Room 1015

Tea break

4:15–5:15, Room 31

Yongbin Ruan (Wisconsin)

Quantum cohomology of singularity and mirror symmetry

A central problem in mathematics as well as in physics is the mirror symmetry between Gromov-Witten invariants and the variation of Hodge structure for mirror pairs of Calabi-Yau 3-folds. They correspond to A and B-models of type II string theory. A much simpler model is Landau-Ginzburg/singularity theory, which is thought to be well-understood, at least in physics. It is surprising that we do not yet have an A-model description of Landau-Ginzburg/singularity theory. Motivated by an PDE proposed by Witten, I will give a construction of a quantum cohomology theory (A-model) of Landau-Ginzburg/singularity theory, in terms of solving the moduli problem for Witten's equation. Applications to mirror symmetry and integrable systems will be discussed. (This is joint work with Huijun Fan and Tyler Jarvis.)

Please contact alanw@math.berkeley.edu to arrange parking.

There will be a dinner at 6pm

—Y. Eliashberg
D. Fuchs
V. Ginzburg
R. Montgomery
X. Tang
A. Weinstein