

Conference on New Challenges and Perspectives in Symplectic Field Theory  
*A conference in Honour of Yasha Eliashbergs 60th Birthday*  
June 25 – 29, 2007

## Transversality issues in SFT

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### Abstract

I will begin by recalling the classical approach (using Banach manifolds, Fredholm sections, and the Sard-Smale theorem) to prove transversality for moduli spaces of holomorphic curves, and then illustrate why it fails already for in Gromov-Witten theory. Next, I will outline how the classical approach can be extended to obtain transversality in many situations including Gromov-Witten theory, Floer homology, and many interesting cases of SFT. This approach is still very classical, using domain-dependent almost complex structures and Donaldson's theory of symplectic hypersurfaces.

The lecture ends with a discussion of present limitations of this method, thus setting the stage for Katrin Wehrheim's lecture on polyfolds and abstract perturbations.