Novikov-symplectic cohomology and exact Lagrangian embeddings

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We are interested in finding topological obstructions to the existence of exact Lagrangian submanifolds L inside a cotangent bundle T^*N. Under mild homotopy assumptions on N, I proved that the image of $\pi_2(L)$ inside $\pi_2(N)$ has finite index. This result makes no assumption about the Maslov class of L, and the manifolds need not be orientable. My approach builds on Viterbo's work: by using symplectic cohomology we construct a transfer map on the Novikov homologies of the free loop spaces of N and L. The result then follows from a vanishing result for the Novikov homology of loop spaces.

1:10 p.m.
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