1046-57-1470 **Benjamin J Cooper*** (bjcooper@math.ucsd.edu), 9525 Genesee Ave #220, San Diego, CA 92121. *Three Manifold Cobordisms and Homotopy Lie Algebras.*

Let L is a homotopy Lie algebra with invariant trace. It is shown that this is equivalent to the existence of a module structure over a cobordism category of 3-manifolds and that its Lie algebra homology corresponds to a enlargement of this category. Consequences of this include an action of 3-manifold cobordisms on the graph homology associated to an operad and $H^{*-1}(X, T_X \otimes A)$ of a complex manifold X with coherent sheaf A of $\mathcal{O}_X$ modules. (Received September 15, 2008)