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Operads and modules in embedding calculus.

It is now well known that embedding calculus is closely related to the theory of modules over the little balls operad. In particular the Taylor tower in embedding calculus can be represented, in favorable cases, as the space of maps between right modules (or weak bimodules) over this operad. We will consider from this point of view certain homological spectral sequences that arise in embedding calculus. We will use a "change of operads isomorphism" to show that the E^2 term of this spectral sequence can be represented in terms of the space of maps between modules over the *commutative* operad. When working rationally, formality of the little balls operad allows us to conclude, in some cases, that the spectral sequence terminates at the E^2 term, thus giving us a model for the rational homology of certain embedding spaces in terms of maps of modules over the commutative operad. (Received September 20, 2011)