

Thin compactifications and Relative Fundamental Classes

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Families of moduli spaces in symplectic Gromov-Witten theory and gauge theory are often manifolds that have "thin" compactifications, in the sense that the boundary of the generic fiber has codimension at least two. In this talk we discuss a notion of a relative fundamental class for such thinly compactified families. It associates to each fiber, regardless whether it is regular or not, an element in its Čech homology in a way that is consistent along paths. The invariants defined by relative fundamental classes agree with those defined by pseudo-cycles, and the relative fundamental class is equal to the virtual fundamental class defined by Pardon via implicit atlases in all cases when both are defined. We give some examples of this construction, discuss some of its properties, and its benefits. This talk is based on joint work with Tom Parker.