1023-58-1593 **Jens von Bergmann*** (jvonberg@nd.edu), Department of Mathematics, 255 Hurley Hall, Notre Dame, IN 46556-4618. *Compactness for folded holomorphic maps.*

Let (X, ω) be an oriented closed folded symplectic manifold, i.e. ω is a closed 2-form vanishing transversely on a hypersurface Z (the "fold") separating X into two parts X^+ and X^-, so that the kernel of ω induces a 1-dimensional foliation on Z. Every oriented 4-manifold admits a folded symplectic structure. We assume that the leaves of the foliation are the orbits of a free S^1-action. This happens frequently.

Folded holomorphic maps are pseudoholomorphic maps from Riemann surfaces with boundary into $X^\pm$ with boundary on Z, satisfying appropriate boundary conditions. The boundary conditions are mediated by $\mathcal{H}$-holomorphic maps into the fold, i.e holomorphic maps over the parameter space given by H_1 of the domain.

We prove compactness for the space of $\mathcal{H}$-holomorphic maps with fixed topological data and deduce that the space of folded holomorphic maps is compact in certain cases. (Received September 26, 2006)