Linearization Continued

Section 8.4 Follow-Up

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Review

- The Floer equation is given by
$$\frac{\partial u}{\partial s} + J(u)\frac{\partial u}{\partial t} + \text{grad } H_t(u) = 0.$$
- We fixed a solution
$$u \in \mathcal{M}(x, y) \subset C^\infty_{\text{loc}}(\mathbb{R} \times S^1; W).$$
- We use the assumption:
For every $w \in C^\infty(S^2, W)$ there exists a symplectic trivialization of the fiber bundle $w^* TW$, i.e. $\langle c_1(TW),\ \pi_2(W)\rangle = 0$ where c_1 denotes the first Chern class of the bundle TW.
- We have a pullback that is a symplectic fiber bundle:
$$\begin{array}{ccc} \tilde{u}^* TW & \xrightarrow{d\tilde{u}} & TW \\ \downarrow & \lrcorner & \downarrow \\ S^2 & \xrightarrow{\tilde{u}} & W \end{array}$$
- Using the assumption, trivialize the pullback $\tilde{u}^* TW$ to obtain an orthonormal unitary frame