BORDERED FLOER HOMOLOGY HOMEWORK 3

ROBERT LIPSHITZ

(1) After today's lecture, we (hopefully) have enough background for Problems 1, 3 and 4 from Homework 2.

(2) Show that if $\mathcal{Z}_1$ and $\mathcal{Z}_2$ are pointed matched circles so that $F(\mathcal{Z}_1)$ and $F(\mathcal{Z}_2)$ are homeomorphic then $\mathcal{A}(\mathcal{Z}_1)$ is derived (Morita) equivalent to $\mathcal{A}(\mathcal{Z}_2)$. (Hint: recall that if $\mathbb{I}_{\mathcal{Z}}$ denotes the mapping cylinder of the identity map of $F(\mathcal{Z})$ then $\widehat{CFDA}(\mathbb{I}_{\mathcal{Z}}) \simeq \mathcal{A}(\mathcal{Z})$ as an $\mathcal{A}(\mathcal{Z})$-bimodule. See also [1, Corollary 8.1].)

(3) Define the *0-framed split handlebody of genus g*, HB_0^g, to be the boundary connect sum of g 0-framed solid tori. Compute $\widehat{CFD}(\mathsf{HB}_0^g)$.

References

[1] Robert Lipshitz, Peter S. Ozsváth, and Dylan P. Thurston, *Bimodules in bordered Heegaard Floer homology*, 2010, arXiv:1003.0598.

Department of Mathematics, Columbia University, New York, NY 10027
E-mail address: lipshitz@math.columbia.edu

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