1000-57-48 **Jozef H Przytycki\*** (`przytyck@gwu.edu`), Department of Mathematics, George Washington University, 2201 G Street NW, Washington, DC 20052, and **Marta M Asaeda** and **Adam S Sikora**. *Categorification of the Kauffman bracket skein module of $F \times I$.*

We define Khovanov homology, $H_{i,j,k}$ for links in products of surfaces and an interval and in twisted $I$-bundles over unorientable surfaces (excluding $RP^2$). We show how to stratify this homology so that (in the product case, $F \times I$) it categorifies the Kauffman bracket skein module (KBSM) of $F \times I$. That is, for any link $L$ in $F \times I$ we can recover coefficients of L in the standard basis $B(F)$ of the KBSM of $F \times I$. In other words if $L = \sum_b a_b(A)b$ where the sum is taken over all basic elements, $b \in B(F)$, then each coefficient $a_b(A)$ can be recovered from polynomial Euler characteristics of the stratified Khovanov homology. In the case of unorientable F we are able to recover coefficients $a_b(A)$ only partially. We propose another basis of the KBSM for which categorification seems to be possible even for unorientable $F$ (we use cores of Möbius bands several times even if they intersect one another). (Received August 06, 2004)