

A COMBINATORIAL DEFINITION OF THE STRING TOPOLOGY PRODUCT

ABSTRACT. We introduce a commutative product of degree $-n$ on the homology $H_*(X)$ of an n -dimensional special cubical set X and lift it on the free loop homology $H_*(\Lambda M)$ for $M = |X|$ to be the geometric realization. These products agree with the intersection and string topology products respectively when M is an oriented closed manifold. Using the explicit diagonal of permutahedra for the standard coproduct on $H_*(\Lambda M)$ we establish the compatibility relation with the string topology product. This is a joint work with Manuel Rivera.