OPEN GROMOV-WITTEN-WELSCHINGER INVARIANTS IN HIGHER DIMENSIONS

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ABSTRACT. Over a decade ago, Welschinger defined real enumerative invariants in dimensions 2 and 3. It has remained an open problem to extend these invariants to higher dimensions. I will discuss a solution to this problem in the language of open Gromov-Witten theory. The key idea is that boundary point constraints should be replaced with canonical gauge equivalence classes of Maurer-Cartan elements (bounding chains) in the relevant Fukaya *A*-infinity algebra. The resulting invariants satisfy a version of the open WDVV equation, which determines all invariants for projective spaces. To formulate the open WDVV equation, we construct a canonical lift of the quantum product to cohomology relative to a Lagrangian submanifold. Conjugation symmetry does not play an essential role in our arguments. This is joint work with S. Tukachinsky