Welschinger-Witt invariants

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Abstract

This talk will address the problem of enumerating with quadratic forms rational curves in complex surfaces or symplectic 4-manifolds. The real Abramovich-Bertram formula for Welschinger invariants of real symplectic rational 4-manifolds allows one to encode them in what is known as a Witt invariant over any field. It turns out that these Weslchinger-Witt invariants recover the quadratic Gromov-Witten invariants, recently defined by Kass-Levine-Solomon-Wickelgren, in the case of rational del Pezzo surface of degree at teast 6 (and conjecturally of degree at least 3). As a consequence, quadratic Gromov-Witten invariants of these rational surfaces over any field are determined by the two special fields $\mathbb{C}$ and $\mathbb{R}$.

This is a joint work with Johannes Rau and Kirsten Wickelgren.

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