Oriented triangulations, double covers and maximal green sequences

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I will explain how oriented triangulations of surfaces model the tilting theory of double covers of cluster categories. As applications, I will show that these provide combinatorial models for mutations of $\mathbb{Z}/2\mathbb{Z}$-graded quivers with potentials in the sense of Amiot—Oppermann and for the so-called "maximal green sequences" which arise in the context of theoretical physics.

Joint work with Thomas Brüstle.

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