1144-46-336 **Erik Bédos** and **S Kaliszewski***, SoMSS / ASU, PO Box 871804, Tempe, AZ 85287, and **John Quigg**. *Skew Products: Coactions We Can See.* Preliminary report.

Given a left-cancellative small category $\mathcal{C}$ (in the sense of Spielberg), a discrete group G, and a functor $\eta\colon \mathcal{C} \to G$, we construct a *skew product* category $\mathcal{C} \times_\eta G$. This represents a coaction "we can see" in the sense that there exists a C^*-coaction δ of G on the Cuntz-Krieger algebra $\mathcal{O}(\mathcal{C})$ such that $\mathcal{O}(\mathcal{C} \times_\eta G) \cong \mathcal{O}(\mathcal{C}) \rtimes_\delta G$. Moreover, the skew product carries a natural free action of G that corresponds to the dual action $\hat{\delta}$ under this isomorphism, and this allows us to recover $\mathcal{C}$ as the quotient category $(\mathcal{C} \times_\eta G)/G$. As a sort of converse, we also have a "Gross-Tucker"-type theorem that says that any LCSC that carries a free action of G can be realized as a skew product category.

In this talk, I'll present these results in as elementary a fashion as possible, and say what I can about their proofs. I'll also endeavor to explain how the theory fits into a broader context — one that goes back nearly 20 years to ideas of Kumjian, Pask, and Raeburn for the case of graph C^*-algebras.

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