2-Segal Simplicial Sets and Pseudomonoids in Span

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This talk is designed as an accessible introduction to the correspondence between 2-Segal simplicial sets, which can be thought of as encoding a kind of weak categorical associativity, and various flavors of pseudomonoid in the bicategory Span. If time permits, I will allude to several natural extensions of this correspondence, adding further structure to our simplicial sets and discovering the kinds of algebraic structures they produce. These structures may in many cases then be productively “decategorified”, yielding familiar associative algebras such as the group ring C(G), as well as more unusual finds. While this topic may appear somewhat linguistically heavy, a convenient graphical calculus will be provided, and no knowledge of infinity-categories is required to understand this talk! Content is based on current work-in-progress (joint with R. Mehta), as well as previous results by Ivan Contreras, Rajan Mehta, and Walker Stern.