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William Benjamin Grilliette* (s-wgrilli1@math.unl.edu), 550 N 26th St #20, Lincoln, NE 68503. *A New View of Presentation Theory for C*-algebras.*

In this talk, I offer an alternative presentation theory for C*-algebras with applicability to various other normed structures. Specifically, the set of generators is equipped with a nonnegative-valued function which ensures existence of a C*-algebra for the presentation. This modification allows clear definitions of a “relation” for generators of a C*-algebra and utilization of classical algebraic tools, such as Tietze transformations.

Further, I will demonstrate a behavior alien to algebraic presentation theory, yielding a bifurcation theory for isomorphism classes. As an example, I will discuss the universal C*-algebra of an invertible element, given by the presentation

$$\langle (x, t), (y, s) \mid xy = yx = 1 \rangle_{\mathbf{1}C^*},$$

where $t, s \geq 0$. The isomorphism classes which arise depend on a numeric condition on the product ts . If $ts = 1$, the algebra is $C(\mathbb{T})$. If $ts > 1$, the algebra is $C[0, 1] *_C C(\mathbb{T})$, the free product with amalgamation along the scalars. (Received September 21, 2010)