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The rising STAR *of Texas*

Texas State Topology Group

Friday, April 07, 11:00-noon, in DERR 229.

Dr. William Grilliette
"Presentations and Tietze Transformations in Functional Analysis"

ABSTRACT

This talk covers a fundamental difference between algebraic theory and functional analysis. Most every object in algebra, such as a group or a ring, can be concretely constructed by a quotient of an appropriate free object. This ubiquitous method gives rise to Tietze transformations, converting one presentation of an object to another.

Unfortunately, free objects are scarce in analysis, making a parallel construction seem impossible. However, the speaker's 2012 papers use the notion of a "weighted set" to replace the traditional free construction with a "scaled-free" construction. In so doing, Tietze transformations and other methods from algebra can be recreated successfully in the functional analysis setting.

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