METU Mathematics General Seminar

A Categorical Perspective on Representation Theory

Deniz Yılmaz

Bilkent University (Ankara, Türkiye)

Abstract

Groups arise naturally in the study of symmetry, and representation theory studies groups through linear algebra. In this talk, we will introduce a categorical framework in which finite groups appear as objects and the morphisms between them encode natural operations from representation theory. After introducing the classical theory of bisets and biset functors, we will discuss two related refinements: diagonal p-permutation functors, obtained from suitable bimodules, and p-bifree biset functors, obtained by restricting to a distinguished class of bisets. These constructions connect naturally with current questions in modular representation theory, especially local-global conjectures.

Date: Thursday, 5 March 2026
Time: 15:40
Place: Gündüz İkeda Seminar Room