TOPOLOGY SEMINAR

An introduction to infinity categories

By

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Abstract: In studying the homotopy theory of topological spaces it soon becomes apparent that the homotopy category itself is not sufficient, since many homotopy invariants cannot be described or calculated in that category.
Since there are other settings, such as the chain complexes of homological algebra, in which this holds, Quillen proposed an axiomatization of such situations in terms of model categories. However, these turn out to be too restrictive for dealing with certain questions, and in particular with homotopy commutative diagrams and the invariants (such as Toda brackets) which they encode. Dwyer and Kan suggested an alternative simplicial approach, which later devolved into several independent models for what we now call infinity categories, in terms of simplicially enriched categories, simplicial spaces, quasi-categories, and others.
In the talk we will provide examples of questions best addressed in this setting, and briefly describe the form they take in the different models, as time permits.

Date: Monday, Feb 6, 2023
Time: 13:30 (UTC+3)
Place: Zoom
To request the event link, please send a message to cihan.okay@bilkent.edu.tr