



# TOPOLOGY SEMINAR

## Model Categories II - Derived functors and Quillen adjunctions

By

**Igor Sikora**  
(Bilkent)

**Abstract:** Having the notion of a homotopy category, we will define the notion of a derived functor. Further, we will compare model structures and their homotopy categories by Quillen functors. Therefore we will cover Quillen functors, Quillen adjunctions, and Quillen equivalences. We will also prove that Quillen model structures on simplicial sets and topological spaces are Quillen equivalent. The talk will finish with a model structure on simplicial sets relevant to the theory of quasicategories, i.e., the Joyal model structure.

**Date:** Monday, March 20, 2023

**Time:** 13:30

**Place:** SA141 - Mathematics Seminar Room & ZOOM

To request the event link, please send a message to [cihan.okay@bilkent.edu.tr](mailto:cihan.okay@bilkent.edu.tr)