



# TOPOLOGY SEMINAR

## “A Lie group analogue of the coset poset of abelian subgroups”

By

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**Abstract:** To a group  $G$  and a family of subgroups  $F$ , one can associate a simplicial complex  $C(F,G)$ , whose simplices are in correspondence with the chains of cosets of  $G$ , with respect to  $F$ . Abels and Holz studied some homotopy properties of  $C(F,G)$ , and their relationship with  $G$ . For example,  $C(F,G)$  is simply-connected if and only if  $G$  is the amalgamated product of subgroups in  $F$  along its intersections. C. Okay noted that for an arbitrary group  $G$ , specializing the simple-connectivity of  $C(F,G)$  to the family of abelian subgroups, forces  $G$  to be abelian.

In this talk I will discuss a Lie group analogue of  $C(F,G)$  with respect to the family of abelian subgroups, arising from the work of Adem, Cohen and Torres-Giese. The main result I will describe is recent work with O. Antolín-Camarena and S. Gritschacher which deals with the analogue of Okay's result for compact Lie groups.

**Date:** 30 November 2020

**Time:** 17:00

**Place:** Zoom

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