



## Mathematics and CS Seminar

# Limits of the diagonal Cartan subgroup in $SL(n, \mathbb{R})$ and $SL(n, \mathbb{Q}_p)$

**Arielle Leitner**

Weizmann Institute of Science

Host: Timothy Browning

A conjugacy limit group is the limit of a sequence of conjugates of the positive diagonal Cartan subgroup,  $C \leq SL(n)$  in the Chabauty topology. Over  $\mathbb{R}$ , the group  $C$  is naturally associated to a projective  $n-1$  simplex. We can compute the conjugacy limits of  $C$  by collapsing the  $n-1$  simplex in different ways. In low dimensions, we enumerate all possible ways of doing this. In higher dimensions we show there are infinitely many non-conjugate limits of  $C$ . In the  $\mathbb{Q}_p$  case,  $SL(n, \mathbb{Q}_p)$  has an associated  $p+1$  regular affine building. (We'll give a gentle introduction to buildings in the talk). The group  $C$  stabilizes an apartment in this building, and limits are contained in the parabolic subgroups stabilizing the facets in the spherical building at infinity. There is a strong interplay between the conjugacy limit groups and the geometry of the building, which we exploit to extend some of the results above. The  $\mathbb{Q}_p$  part is joint work with Corina Ciobotaru and Alain Valette.

**Thursday, December 10, 2020 02:00pm - 03:00pm**

<https://mathseminars.org/seminar/AGNTISTA>



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

Please find a schedule of the ISTA Shuttle on our webpage:

<https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.