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María Cumplido* (mariacumplidocabello@gmail.com), , Spain. *The poset of parabolic subgroups of large-type Artin groups.*

Artin groups are a natural generalization of braid groups from the algebraic point of view: in the same way that the braid group can be obtained from the presentation of the symmetric group with transpositions as generators by dropping the order relations for the generators, other Coxeter groups give rise to more general Artin groups. There are many basic questions that remain open for Artin groups in general. To study them, experts have focused in certain subgroups called "parabolic subgroups". These subgroups are the building blocks of important simplicial complexes, as the Deligne complex, which has been proved to be CAT(0) in certain cases. The question "Is the intersection of parabolic subgroups a parabolic subgroup?" has not been answered in general. In this talk we will see that the intersection of parabolic subgroups is a parabolic subgroup for Artin groups of large type. In particular, we will use the geometric realization of the poset of parabolic subgroups –that we have called the Artin complex– and we will see that the Artin complex in the large case has a "CAT(0)-like" property: systolicity. This allows us to apply techniques from geometric group theory. This is a joint work with Alexandre Martin and Nicolas Vaskou. (Received January 13, 2021)