
GABRIEL MINIAN, Universidad de Buenos Aires

A new test for studying asphericity of group presentations and Whitehead's asphericity question

I will present a new test for studying asphericity of 2-complexes and group presentations. This test was recently introduced in a joint paper with Jonathan Barmak. Our I-test provides a criterion for deciding when a presentation of an indicable group is aspherical. I will compare the I-test with the different variations of the classical weight tests (such as Gersten's weight test) and show how to use our methods to prove asphericity in cases where the known tests fail. Finally I will apply these new methods to investigate some cases of Whitehead's asphericity question and a conjecture of Ivanov, which is related to Whitehead's question and Kaplansky problem on zero divisors.