Guangzhou Discrete Mathematics Seminar

Some progresses of studies of group connectivity
and modulo orientations of graphs

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When investigating the 4-color problem, Bill Tutte in the 1950s introduced the theory of nowhere zero flows, and proposed the most fascinating flow conjectures of graphs. These conjectures are still open as of today. In 1992, Jaeger, Linial, Payan and Tarsi in JCTB proposed the non-homogeneous version of the nowhere zero flow problem, which is now known as the group connectivity problem of graphs. Tutte indicated that the nowhere zero 3-flow problem is equivalent to the modulo 3 orientation problem. The corresponding non homogeneous version of modulo orientation, now known as the strongly group connectivity problem, was proposed in 2007. In this talk, we will introduce these problems and report some of the recent progresses of these problems.

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seminar series