The Perfect Graph Conjecture

organized by
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Workshop Summary

The workshop had two main purposes: present the proof of the Strong Perfect Graph Conjecture (SPGC), and explore the avenues opened by the new proof. Most of the first day and the second morning were devoted to the proof of the SPGC. The proof was divided into 6 lectures, which allowed for quite a bit of detail. All 4 mathematicians involved in the proof (Chudnovsky, Robertson, Seymour, Thomas) gave lectures. The remaining lectures were all in the theme of perfect graphs. Several lectures addressed the recognition problem, which asks for a polynomial time algorithm to decided if a graph is perfect. (Following the proof of the SPGC, it was generally agreed that the remaining important open question was the recognition problem).

In addition to the lectures there were three discussion sessions and one working session. The discussion sessions involved the entire group presenting open problems and sharing their perspective, describing partial results, etc. Three of those problems formed the basis of the working session, in which the participants broke into small groups to actively work on open problems.

One of the working groups chose to consider the recognition problem. They discovered that several of them had already made progress on the problem, but from complementary directions. This allowed for the possibility that by combining resources they could move much closer to the proof. Indeed, that turned out to be the case, and the proof was completed only a week or so after the workshop ended.