Rational and integral points on higher dimensional varieties

organized by
Bjorn Poonen and Yuri Tschinkel

Workshop Summary

The workshop was devoted to foundational work on algebraic varieties of dimension at least 2, with particular emphasis on the existence and distribution of rational points. This topic is fairly new, and it involves techniques from many areas, including algebraic geometry, analytic number theory, and topology. The goal was to set the foundation for future work in this area, and to publish a proceedings which will become the definitive source of material on this subject.

The first few days were primarily devoted to survey talks on the main areas represented at the workshop. Each main area was allocated at least two talks, and this was of significant benefit for bringing together the participants with different specialties. Also, two discussion sessions produced a detailed list of open problems, with many annotations describing partial results and possible approaches.

The afternoons of the second week of the workshop were devoted to working sessions. The AIM facility was partitioned into 7 regions, and each region was assigned a particular category in the workshop theme. Example categories are Analytic Methods and The Brauer-Manin Obstructions. Significant progress was made on a problem suggested by Chantal David concerning the Selmer group of an elliptic curve.