Some algorithmic and combinatorial applications of the Borsuk-Ulam theorem

Bill Steiger
Rutgers University, New Brunswick

Abstract

The Borsuk-Ulam theorem has many applications in topology, geometry, and combinatorics. I will discuss some combinatorial consequences, typically asserting the existence of a certain combinatorial object. An interesting aspect is the computational complexity of algorithms that search for the object. The study of these algorithms can be facilitated by seeking direct combinatorial existence proofs that bypass Borsuk-Ulam.

Joint work with Sambuddha Roy.

For further information contact {pach.pollack}@cims.nyu.edu, or visit our website: http://www.math.nyu.edu/seminars/geometry_seminar.html