

**Undergraduate Math Club  
Fall 2005  
2<sup>nd</sup> floor Nesbitt Common Room  
Oct. 13, 4:10-5:00pm  
(free pizza and pop, as always)**

**Hex and the Brouwer  
fixed-point theorem  
Professor S. DeBacker**

**Abstract**

Suppose a sheet is taken from a pad of paper, crumpled up, and placed back on the pad. Ignoring real-world complications (atoms, etc.), a remarkable theorem of Brouwer tells us that at least one point in the crumpled-up piece of paper lies directly above the point where it started. Using little more than the basic notion of continuity, we shall present a proof of Brouwer's theorem based on the fact that the two-person game of Hex does not allow ties.