# DIFFERENTIAL GEOMETRY/PDE SEMINAR

WEDNESDAY, DECEMBER 2
COMMUNICATIONS 228
3:45 PM

## On the use of concavity maximum principles

JOHN MCCUAN
(MSRI)

I will discuss the concavity maximum principle developed by Korevaar (c. 1983) and certain more general versions of it due to Kennington (1985) and Alvarez, Lasry, and Lions (1997).

My main interest is in applying a variant of these principles to show quasiconcavity for solutions of the constant mean curvature equation. (Quasiconcavity = convexity of the level sets.) I will describe the two main difficulties in this problem and show how these difficulties can be overcome in certain related problems.