DIFFERENTIAL GEOMETRY/PDE SEMINAR

Wednesday, March 24
C-401 Padelford (Note: Special room and time)
2:30 PM

The Brezis-Nirenberg Equation with Critical Exponent in S^3

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In 1983, Brezis and Nirenberg determined, among many other results, the range of values of *lambda* for which there is a positive solution of the equation

$$-\Delta u = u^5 + \lambda u$$

on a bounded domain of R^3, with Dirichlet boundary conditions on the boundary of the domain. Here 5 is the critical Sobolev exponent in three dimensions. If the domain is a ball, the region of λ's for which there is existence of positive solutions was sharply defined.

In this seminar, I will consider the analogous problem for domains contained in a hemisphere of the three dimensional sphere. This is joint work with C. Bandle (U. of Basel).