Meeting: 1003, Atlanta, Georgia, SS 25A, AMS Special Session on Complex and Functional Analysis, I

1003-46-709 **Laszlo Lempert*** (lempert@math.purdue.edu), Department of Mathematics, Purdue University, 150N University Street, West Lafayette, IN 47907. *Acyclic sheaves in Banach spaces.*

A sheaf on a topological space is called acyclic if its cohomology groups in degrees > 0 vanish. For example, the sheaf of smooth functions, or of forms of a given degree, on finite dimensional smooth manifolds is acyclic, and so are the sheaves of smooth forms of a given bidegree on a finite dimensional complex manifold. These are simple facts, proved using smooth partitions of unity; yet they form one of the two pillars on which the proof of the De Rham and Dolbeault isomorphism theorems rests.

In this talk we shall be concerned with the acyclicity of the sheaves of smooth functions and forms in infinite dimensional manifolds, modeled on Banach spaces. (Received September 28, 2004)