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Gregory D Landweber* (greg@math.uoregon.edu), Mathematics Department, University of Oregon, Eugene, OR 97403-1222. *Off-shell supersymmetry and K-theory*. Preliminary report.

The super Poincare group extends the Poincare group of isometries of Minkowski space by odd operators which square to translations. In off-shell representations of supersymmetry, the super Poincare group acts on multiplets of fields over Minkowski space, without imposing a Lagrangian or equations of motion. In this talk, I will show how such off-shell supersymmetric theories are classified by twisted equivariant K-theory. This is a Minkowski space analogue of the Atiyah-Bott-Shapiro construction for the K-theory of Thom complexes in terms of Clifford modules.

In the second half of the talk, I will discuss several variations of Adinkras, graph-theoretic diagrams introduced by Faux and Gates to classify representations of the one dimensional super Poincare group. I will introduce versions of Adinkras that classify Clifford modules and representations of the two dimensional super Poincare group, as well as equivariant versions which incorporate the symmetry of the massive and massless little groups. (Received September 17, 2005)