1038-57-325 **Bruce Williams*** (williams.4@nd.edu), Dept. of Mathematics, 255 Hurley Hall, Notre Dame, IN 46556, and **John Klein**, MI. *Equivariant Intersection Theory.*

(Joint work with John Klein)

Suppose G is a finite group. Let N, Q, and P be smooth G-manifolds with a G-embedding $\iota : Q \to N$, and a G-map $f : P \to N$. Question: When is f G-homotopic to a map f_1 such that $f_1(P) \cap \iota(Q) = \phi$?

Let E be the homotopy pullback of f and ι.

If G is trivial, then transversality yields an obstruction $I(f, \iota)$ which lives in the bordism of E with coefficients in the virtual bundle over E gotten by pulling back τ_P, τ_Q, and $-\tau_N$ to E and summing together. Thom-Pontryagin implies that this bordism group is isomorphic to a stable homotopy group of a Thom complex for a bundle over E.

In the equivariant case transversality and Thom-Pontryagin both fail. However, we show that it is still possible to give a purely homotopy theoretic description of $I(f, \iota)$ as an element in a certain equivariant stable homotopy group. Furthermore, we show that $I(f, \iota)$ is often the total obstruction to answering the above question. Strong use is made of equivariant Poincare duality with coefficients in equivariant parametrized spectrum.

Applications are made to equivariant fixed point theory. (Received February 12, 2008)