1011-19-180   **Dan Edidin*** (`edidin@math.missouri.edu`), Department of Mathematics, University of Missouri, Columbia, MO 65211. *Non-abelian localization in equivariant K-theory.*

The localizaton theorem for actions diagonalizable groups is a fundamental result in equivariant K-theory. The theorem can be stated as follows: If T is a diagonalizable group acting on a space X and $h \in T$ has fixed locus X^h then the direct image in equivariant K-theory $i_*\colon G(X^h, T) \to G(X, T)$ is an isomorphism after localizing at certain prime ideal in the representation ring $R(T)$. When X is smooth the localization isomorphism has an explicit inverse which is extremely useful for computation.

In this talk, I will explain how to obtain an explicit "localization" (which actually involves completion) formula for actions of arbitrary algebraic groups on smooth algebraic spaces defined over $\mathbb{C}$. Applications include a Riemann-Roch formula for geometric quotients as well as a method to represent elements of equivariant K-theory by cycles.

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