# Localization theorem for algebraic stacks

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The classical Atiyah-Bott localization theorem relates the equivariant cohomology of a space $X$ with the action of a torus $T$ with the cohomology of its fixed locus after inverting finitely many elements in the cohomology of B$T$. This theorem finds applications in enumerative geometry when the parameter space has a natural torus action. The need to access more general parameter spaces (singular and stacky) and the need for refined counts (in other cohomology theories) motivates the need for a more general localization theorem.

In this talk, based on a joint work in progress with Dhyan Aranha, Adeel Khan, Alexei Latyntsev and Hyeonjun Park, we will discuss such a unified Atiyah-Bott localization theorem for equivariant cohomology theories of possibly singular algebraic stacks with an action of a linear algebraic group.