Sivaram K. Narayan* (sivaram.narayan@cmich.edu), Department of Mathematics, Pearce Hall 218, Central Michigan University, Mount Pleasant, MI 48859. Commutators of composition operators with adjoints of composition operators on weighted Bergman spaces.

For linear-fractional self-maps $\varphi$ and $\psi$ of the unit disc $\mathbb{D}$, where at least one of $\varphi$ and $\psi$ is a non-automorphism, we show that the commutator $[C_\psi^*, C_\varphi]$ is non-trivially compact on the weighted Bergman space $A^2_{\alpha}(\mathbb{D})$ if and only if either $\varphi$ and $\psi$ are both parabolic or $\varphi$ and $\psi$ are both hyperbolic, with associated conclusions about their fixed points in each case. In the automorphism case, we show that the commutator $[C_\psi^*, C_\varphi]$ is compact if and only if both $\varphi$ and $\psi$ are rotations. This is a joint work with Barbara MacCluer and Rachel Weir. (Received August 27, 2011)