Each bounded linear operator $T$ on a Hilbert space gives rise to the unital algebra $A(T)$ that it generates, and to three naturally related algebras that are closed in the weak operator topology:

(a) The weak-operator closure $W(T)$ of $A(T)$,

(b) The commutant $\{T\}'$ of $T$, and

(c) The “double commutant” $\{T\}''$.

It’s easy to see that $W(T) \subset \{T\}'' \subset \{T\}'$, so it’s of interest to ask, for a given operator $T$, if either of these set containments is an equality.

This talk will survey some recent work done by various authors on this question for $T$ a linear-fractionally induced composition operator on the Hardy space of the unit disc, and it will explore the relationship between these results and Victor Lomonosov’s notion of strong compactness.

These results follow a well-known pattern: Linear-fractionally induced composition operators exhibit surprisingly diverse behavior; even the simplest such maps can give rise to interesting questions. (Received January 19, 2019)