

# Unitary orbit preservers

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Given an operator  $A$  acting on a Hilbert space  $\mathcal{H}$  and a group  $G$  of unitary operators on  $\mathcal{H}$ , the unitary orbit of  $A$  under  $G$  is  $\{UAU^* : U \in G\}$ . We discuss the problem of characterizing the linear maps which leave this orbit invariant for various choices of  $A$  and  $G$ .