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Aristotelis Panagiotopoulos* (panagio@caltech.edu), Mathematics Department, Caltech, 1200 E. California Blvd, MC 253-37, Pasadena, CA 91125, and **Martino Lupini**. *Unitary equivalence is hard.*

Using a technique developed by Hjorth, Kechris and Sofronidis proved that the problem of classifying all unitary operators $\mathcal{U}(\mathcal{H})$ of an infinite dimensional Hilbert space up to unitary equivalence \simeq_U is strictly more difficult than classifying graph structures with domain \mathbb{N} up to isomorphism.

We introduce a dynamical obstruction for classifying an orbit equivalence relation by one that is induced by a CLI group. Recall that a CLI group is a topological group which admits a complete left invariant metric (solvable groups are CLI). We deduce that \simeq_U is not classifiable by CLI group actions. (Received September 02, 2019)