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Charleston, SC 29409. *A Morita theorem for dual operator algebras.*

We consider some new variants of the notion of Morita equivalence appropriate to algebras of Hilbert space operators which are closed in the ‘weak\* -topology’ (or equivalently, which are dual spaces and known as dual operator algebras), and we will describe how the earlier theory of strong Morita equivalence due to Blecher, Muhly, and Paulsen, transfers to this ‘weak\* topology setting’. We will present our main theorem, that two dual operator algebras are weak\*-Morita equivalent in our sense if and only if they have equivalent categories of dual operator modules. A key ingredient in the proof of our main theorem is  $W^*$ -dilation, which connects the non-selfadjoint dual operator algebra with the  $W^*$ -algebraic framework. (Received September 21, 2010)