A new look at 2-local automorphisms

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By a well-known result of P. Šemrl, every 2-local automorphism of the full
operator algebra over a separable Hilbert space is necessarily an automorp-
hism. This means that every map of that algebra which, on each two-point
subset, equals an algebra automorphism (depending on the two-point sets in
question) is necessarily itself an algebra automorphism. This can be formu-
lated as saying that the automorphism group of the algebra is 2-reflexive.
In this talk we present recent results in which we strengthen that result qu-
ite substantially for *-automorphisms. We show that one can compress the
defining two equations of 2-local *-automorphisms into one single equation,
hence weakening the requirement significantly, but still keeping essentially
the conclusion that such maps are necessarily *-automorphisms. The ob-
servation leads also to the result that the full isometry group (not only the
subgroup of linear isometries) of the full operator algebra is 2-reflexive.