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Endomorphisms of Quantized Weyl Algebras and Their Simple Localizations. Preliminary report.

In this presentation, we discuss the symmetries of a quantized Weyl algebra and its simple localization in terms of their algebra endomorphisms and automorphisms. For the quantized Weyl algebra, we characterize its algebra endomorphisms, which happen to be algebra automorphisms. Then we prove that each algebra endomorphism of a certain simple localization of the quantized Weyl algebra is indeed an algebra automorphism, and determine the algebra automorphism group for this simple localization. Some applications will be discussed as well. (Received September 21, 2015)