Abstract

In this paper we study the eigenfunctions and the eigenvalues of the so-called q-differential operators, which are defined with respect to the product $(R,T) = RT - qTR$, where q is an element of the field and R and T are operators in a Hilbert space. Our results are shown to be applicable to the Caldirola-Montaldi equaiton for the case of electrons under quantum friction. The Lie-admissibility of the product is indicated.