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Fractional Poisson Bracket

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Abstract: In the present paper fractional Hamilton-Jacobi equation has been derived for dynamical systems involving the Caputo derivative. Fractional Poisson-bracket is introduced. Further Hamilton's canonical equations are formulated and quantum wave equation corresponds to the fractional Hamilton-Jacobi equation is suggested. Illustrative examples have been worked out to explain the formalism.

Key Words: Hamilton-Jacobi quantized equation; Riemann-Liouville derivative; Caputo derivative; Canonical transformation; Generating function; fractional Poisson-bracket



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