NORMAL FERMI-WALKER DERIVATIVE IN MINKOWSKI 3-SPACE

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ABSTRACT

First, in Minkowski 3-Space E_1^3, we defined normal Fermi-Walker derivative and applied for adapted frame. Normal Fermi-Walker parallelism, normal non-rotating frame and normal Fermi-Walker derivative Darboux vector expressions according to normal Fermi-Walker derivative are given for adapted frame. Being conditions of normal Fermi-Walker derivative and normal non-rotating frame are analyzed for frames along spacelike, timelike, lightlike curves. It is shown that vector field which take part in [4] is normal Fermi-Walker parallel according to the normal Fermi-Walker derivative along the spacelike, timelike and lightlike general helix. Also, we show that the Frenet frame is normal non-rotating frame according to the normal Fermi-Walker derivative. Then, we proved that the adapted frame is normal non-rotating frame along the spacelike, timelike and lightlike general helix. Our aim is to show that the Fermi-Walker definitions can be defined by the first vector of other frames.

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