# On Harmonic Curvatures of Null Curves of the AW($k$)-Type in Lorentzian Space

Mihriban Külahcı, Mehmet Bektaş, and Mahmut Ergüt

Department of Mathematics, Firat University, 23119 Elazığ, Turkey

Reprint requests to M. K.; Fax:+90 424 2330062; E-mail: mihribankulahci@gmail.com

We investigate null curves of the AW($k$)-type ($1 \leq k \leq 3$) in the 3-dimensional Lorentzian space, $L^3$, and give curvature conditions of these curves by using the Cartan frame. Moreover, we study harmonic curvatures of curves of AW($k$)-type and show that if the $\alpha$ Frenet curve is of type AW(1), then $\alpha$ is a null helix.