Erratum to: Modified Proca equation and modified dispersion relation from a power-law Lagrangian functional

A R El-Nabulsi*

Department of Mathematics and Information Science, Neijiang Normal University, Neijiang 641112, Sichuan, China

Published online: 31 July 2013

Erratum to: Indian J Phys 87:465–470
DOI 10.1007/s12648-012-0237-5 (2013)

There is a simple correction in the manuscript. In fact, the action of the theory is

$$S = \int \ln L^{\gamma(t)}(t, \dot{q}(t), q(t)) dt = \int \gamma(t) \ln L(t, \dot{q}(t), q(t)) dt$$

and accordingly Eq. (1) is

$$\begin{aligned} \frac{\partial L}{\partial q} - \frac{d}{dt} \left(\frac{\partial L}{\partial \dot{q}} \right) - \frac{\gamma(t)}{L} \left(\frac{\partial L}{\partial t} + \dot{q} \frac{\partial L}{\partial q} + \ddot{q} \frac{\partial L}{\partial \dot{q}} \right) \frac{\partial L}{\partial \dot{q}} \\ - \frac{1}{\gamma(t)} \frac{d\gamma(t)}{dt} \frac{\partial L}{\partial \dot{q}} = 0 \end{aligned} \quad (1)$$

In the rest of the manuscript, the new action holds, e.g., $S = \int_{\Omega} \ln L^{\gamma(t)}(x, \dot{q}(x), q(x)) d^4x$ and so on. Accordingly, the physics will not be altered accordingly only up to a certain constant.

*Corresponding author, E-mail: nabulsiahmadrami@yahoo.fr