

HOMEWORK 10

Due: Tuesday, April 25

Problems: Theory of Relativity

(Reading: Grffiths, Section 12.2.4)

12.37 and 12.39

Problem 10

In the Laboratory frame (K-frame), a constant force $\mathbf{F} = \hat{\mathbf{e}}_x * F$ was exerted at the time $t=0$ on the particle of mass M . The initial particle velocity was $\mathbf{v} = 0$. Calculate the proper time τ for this accelerated particle as function of the laboratory time t .