Abstract Submitted
for the APR16 Meeting of
The American Physical Society

Dynamics In A Maximally Symmetric Universe[1] ASNAKEW BEWKETU[2], ADDIS ABABA UNIVERSITY — Our present understanding of the evolution of the universe relies upon the Friedmann- Robertson- Walker cosmological models. This model is so successful that it is now being considered as the Standard Model of Cosmology. So in this work we derive the Fried- mann equations using the Friedmann-Robertson-Walker metric together with Einstein field equation and then we give a simple method to reduce Friedmann equations to a second order linear differential equation when it is supplemented with a time dependent equation of state. Furthermore, as illustrative examples, we solve this equation for some specific time dependent equation of states. And also by using the Friedmann equations with some time dependent equation of state we try to determine the cosmic scale factor(the rate at which the universe expands) and age of the Friedmann universe, for the matter dominated era, radiation dominated era and for both matter and radiation dominated era by considering different cases. We have finally discussed the observable quantities that can be evidences for the accelerated expansion of the Friedmann universe.

[1]I would like to acknowledge Addis Ababa University for its financial and material support to my work on the title mentioned above..
[2]The following abstract is the ABSTRACT part of the thesis that I did for the masters program in Addis Ababa University in the academic year 2011/2012.

Asnakew Bewketu
ADDIS ABABA UNIVERSITY

Date submitted: 08 Apr 2016 Electronic form version 1.4