RobertsonWalker metric

Isotropic and homogeneous

line element

isotropic and homogeneous three-dimensional hpersurface

: time-dependent scale factor, relates the coordinate labels of the fundamental observers to true physical distance.

The proper time of an observer: the one recorded by the clock at rest with the observer.

Cosmic time is the proper time of all fundamental observers.

Proper distance: for any two fundamental observers at any give cosmic time,

: comoving distance between the two fundamental observers, the proper distance measured in units of the scale factor.

Conformal time