The Hebrew University of Jerusalem , Astrophysics Seminar

Prof. Joseph Katz

Racah Institute of Physics, Hebrew University of Jerusalem

Kaplun Building, Seminar room, 2nd floor

"On dark matter and dark energy"

Since the geometry of our universe seems to depend very little on baryonic matter, we consider a variational principle involving only dark matter and dark energy which in addition make them depend on each other. There are no adjustable parameters or scalar fields with appropriate equations of state. No quintessence. For a pressure-less, three-flat FRW model, the cosmological "constant" is now a function of time, positive by definition and always small. It's time derivative or rather its associated parameter w is always negative and close to minus one. The most interesting point is that the age of the universe and w itself are correlated. Moreover, this rather unsophisticated model provides a very limited range for both these quantities and results are in surprising agreement with observed values. The problem of vacuum energy remains what it was; the problem of the horizon remains the same, the problem of coincidence is significantly less annoying.

Additional details of the upcoming Astrophysics' seminars can be found at the following link - [Astrophysics Seminars]