

Title: Supplementary considerations on Everpresent Lambda

Speakers: Rafael Sorkin

Collection: Everpresent Lambda: Theory Meets Observations

Date: November 12, 2019 - 3:45 PM

URL: <http://pirsa.org/19110069>

$$\kappa = 8\pi G$$

$$\nabla_b G^{ab} \equiv 0$$

$$\nabla_b T^{ab} = 0$$

$$\frac{G^{ab}}{\kappa} + \Lambda g^{ab} = T^{ab}$$

$$\nabla_b \Lambda g^{ab} = 0$$

$$\nabla_b$$



nonlocal quantum discrete

$$\chi = 8\pi G$$

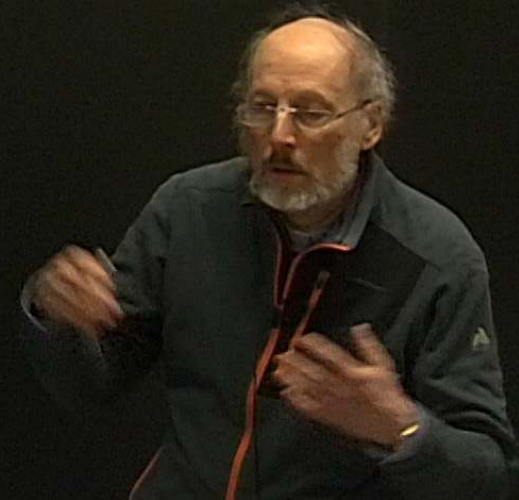
$$\nabla_b G^{ab} = 0$$

$$\nabla_b T^{ab} = 0$$

$$\frac{G^{ab}}{\chi} + \Lambda g^{ab} = T^{ab}$$

$$\nabla_b \Lambda g^{ab} = 0$$

$$\nabla_b$$



nonlocal quantum discrete

$$\chi = 8\pi G$$

$$\nabla_b G^{ab} = 0 \quad \nabla_b T^{ab} = 0$$

$$\frac{G^{ab}}{\alpha} + \Lambda g^{ab} = T^{ab}$$

$$\nabla_b$$

$$\nabla_b \Lambda g^{ab} = 0$$

$$H = \dot{a}/a$$

caveat stochastic g_{ab}

isotropy + homogeneity

→ Fr 1
Fr 2

$$3H^2 - \Lambda = \rho_{matter}$$

nonlocal quantum discrete

$$\kappa = 8\pi G$$

$$\nabla_b G^{ab} = 0 \quad \nabla_b T^{ab} = 0$$

$$\frac{G^{ab}}{\kappa} + \Lambda g^{ab} = T^{ab}$$

$$\nabla_b$$

$$\Lambda g^{ab} = 0$$

$$H = \dot{a}/a$$

caveat stochastic gab

isotropy + homogeneity

Fr 1
Fr 2

$$3H^2 - \Lambda = \rho_{matter}$$

~~\dot{a}/a~~

= 0

No big extra dimensions \rightarrow $\delta \Lambda$ small



al quantum discrete

$$\kappa = 8\pi G$$

$$\nabla_b G^{ab} \equiv 0 \quad \nabla_b T^{ab} = 0$$

$$\frac{G^{ab}}{\kappa} + \Lambda g^{ab} = T^{ab}$$

$$\nabla_b \Lambda g^{ab} = 0$$

$$H = \dot{a}/a$$

caveat stochastic g_{ab}

isotropy + homogeneity



Fr 1
Fr 2

$$3H^2 - \Lambda = \rho_{matter}$$

~~\dot{a}/a~~

al quantum discrete

$$\kappa = 8\pi G$$

$$\nabla_b G^{ab} = 0 \quad \nabla_b T^{ab} = 0$$

$$\frac{G^{ab}}{\kappa} + \Lambda g^{ab} = T^{ab}$$

$$\nabla_b \Lambda g^{ab} = 0$$

$$H = \dot{a}/a$$

caveat stochastic g_{ab}

isotropy + homogeneity



- Fr 1
- Fr 2

$3H^2 - \Lambda = \rho_{matter}$
\dot{a}/a

= 0

No big extra dimensions \rightarrow $\delta\Lambda$ small



$$H^2 = \Lambda + \rho_m$$

= 0

No big extra dimensions \rightarrow $\delta \Lambda$ small



$$3H^2 = \Lambda + \rho_{\text{matter}}$$

$H = L^{-1}$ nonlocal quantum discrete

$$\int R dV$$

$$\int \Lambda dV$$

$$R \sim \frac{1}{L^2} L^D$$

$$\Lambda \sim \frac{1}{L^{D/2}} L^D$$

$D < 4$ Λ dominates
 $D > 4$ R_{ab} "

$$\Lambda \sim \frac{1}{V} \sim \frac{1}{L^{D/2}} \nabla_b$$

caveat stochastic g_{ab}

isotropy + homogeneity \rightarrow

$$\mathcal{R} = 8\pi G$$

$$\frac{G^{ab}}{\mathcal{R}} + \Lambda g^{ab} = T$$

$$\nabla_b \Lambda g^{ab} = 0$$

