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Erratum

Erratum to: Distortions of Robertson–Walker metric in perturbative cosmology and interpretation as dark matter and cosmological constant

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This erratum concerns the corrections of Equation (41), that should read:

$$\langle A\rangle(\tau) = 4\pi\left(\frac{1}{3}\mathcal{N}(n/\sqrt{3}) - \frac{1}{n^2}\right)\frac{G\langle\tilde{\rho}_0\rangle}{H_0^2}a(\tau)^{n-1},$$

and Equation (44), that should read:

$$\mathcal{N}(n) = \frac{1}{n^2+1} - \frac{1}{n^2}, \quad \mathcal{M}(n) = \frac{1}{n^2-1} - \frac{1}{n^2}.$$

These leads to corrections to subsequent Equations (45), (50), (51) and (53). The corrected formulas allows to evaluate the parameters as

$$n \cong 0.6761, \quad \Omega_{IM0} \cong 0.0402,$$

which return a complete explanation of the dark matter $\Omega_{FM0} \cong 0.272 \cong \Omega_{DM0}$ and the dark energy $\Omega_{F\Lambda 0} \cong 0.685 \cong \Omega_{\Lambda 0}$.

The Equation (69) becomes

$$\Omega_{F\Lambda}(t) \cong \begin{cases} unknown & for\ \mathbf{a}(t) < 0.082 \\ 1 & for\ 0.082 < \mathbf{a}(t) < 0.867 \\ 0.685 \cdot \mathbf{a}(t)^{-2.65} & for\ \mathbf{a}(t) > 0.867 \end{cases}.$$

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