the general science journal

Collapsing Particles

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We can not simply presuppose from the observed red shift that "the Universe" is expanding. Another possibility is particle collapse. If the charge frequency (rest mass) of particles (such as the proton and electron) is linearly increasing with time (with relatively same change of value), we can observe:

- Electromagnetic waves from older atoms which are red shifted (the relative structure of the spectral lines is given by the fine structure constant) and this shift is proportional to the time (distance) of wave propagation (v/c = at/c).
- "Illusive" acceleration (a=cH≈7E-10 m/s^2, where H is Hubble's constant) producing anomalies (Pioneer time acceleration on a scale of the signal release time) and the galactic problem of matter which is distant from the galactic bulge ("dark matter and dark energy")
- Electromagnetic induced interaction - gravity.

Particles which are kept together by an electromagnetic field (atoms and their bonds) decrease their size over time. We can demonstrate induction by the simple example below. Using the Liénard-Wiechert retarded potentials of a moving charge,

$$\varphi = \frac{Q}{4\pi\varepsilon_0}\frac{1}{R-\vec{R}\cdot\vec{\beta}} \qquad \vec{A} = \frac{\mu_0 Q}{4\pi}\frac{\vec{u}}{R-\vec{R}\cdot\vec{\beta}}$$

where $\vec{R}$ is the retarded position and $\vec{\beta}=\frac{\vec{u}}{c}$, the normalized velocity vector. Using the identities,

$$\vec{E} \equiv -grad\varphi - \frac{\partial\vec{A}}{\partial t} \qquad \vec{B} \equiv rot\vec{A} \qquad \text{and} \qquad \vec{n} = \frac{\vec{R}}{R}$$

we will obtain the well-known electric field,

$$\vec{E} = \frac{Q}{4\pi\varepsilon_0}\frac{1}{\left(1-\vec{n}\cdot\vec{\beta}\right)^3}\left\{\frac{(1-\beta^2)\left(\vec{n}-\vec{\beta}\right)}{R^2}+\frac{1}{c}\frac{\vec{n}\times\left[\left(\vec{n}-\vec{\beta}\right)\times\dot{\vec{\beta}}\right]}{R}\right\}$$

where the second term corresponds to radiation from acceleration. If we neglect the first term for large distances, we obtain

$$\vec{E} = \frac{Q}{4\pi\varepsilon_0}\left\{\frac{1}{c}\frac{\vec{n}\times\left[\left(\vec{n}-\vec{\beta}\right)\times\dot{\vec{\beta}}\right]}{R}\right\}$$

with a factor of about, $\frac{\dot{\beta}}{c} = \frac{H}{c}$.

But we must consider that neutral matter consists of charges with both polarities moving (collapsing) in opposite directions with respect to the "average" centre of "gravity". Their position vector $\vec{R}$, will be similar for large distances and we must multiply the total field by an additional "dipole factor", $\frac{d}{R}$ where *d* is the average opposite charge distance. The total far- field will be (except for negligible factors)

$$\vec{E} = \frac{Q}{4\pi\varepsilon_0}\left\{\frac{d}{c}\frac{\vec{n}\times\left[\left(\vec{n}-\vec{\beta}\right)\times\dot{\vec{\beta}}\right]}{R^2}\right\} \approx \frac{Q}{4\pi\varepsilon_0}\frac{1}{R^2}\frac{d}{c}\vec{n}\times\left[\vec{n}\times\dot{\vec{\beta}}\right]$$

The total factor of the induced part is then

$$\frac{d\dot{u}}{c^2} = \frac{dH}{c} = \frac{\tau}{H^{-1}}$$

as the electric field correction, and equals about 8.09E-37 for H^{-1}=13.8E9 years. The Bohr diameter *d*=0.1058 nm (with increasing pressure and decreasing distance, the field correction also decreases and thus, a singularity is not produced). This could explain gravitation (the origin of large number $\approx 10^{40}$ multiples) as electric field changes (corrections). Note that the interaction ratio equals,

$$G\frac{m_p m_p}{r^2}\Big/\frac{1}{4\pi\varepsilon_0}\frac{q_e q_e}{r^2} = 8.09\cdot 10^{-37}$$

and for m_e, it corresponds to the weak distance, d_W of about two wavelengths of the 79 GeV particle.

As shown many times before, it is more accurate to explain reality by the microscopic approach (collapse) rather than through the macroscopic (astronomical) point of view (G, k, Λ is postulated in "deep" space without experimental proofs).