

The Atomic Bond

Electric nature of photons determines the bond strength

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The current associated with the bonding photon clusters dictates the bond strength. The bonded atoms are separated by a distance equal to the Boltzmann Constant.

Particle	Mass Kg	Radius m	Energy J	Force N	Acceleration $a \times 10^7$ Volts
Proton	1.67×10^{-27}	1.534×10^{-18}	1.5×10^{-10}	9.795×10^7	5.856×10^{34}
Oxide	1.33×10^{-26}	1.933×10^{-19}	1.193×10^{-9}	6.17×10^9	4.6497×10^{35}

$$q^2 = M \times R \times 10^7$$

A Proton

$$(1.60217653 \times 10^{-19})^2 =$$

$$1.672622216 \times 10^{-27} \times 1.534697799 \times 10^{-18} \times 10^7$$

An Oxide

$$(1.60217653 \times 10^{-19})^2 =$$

$$1.328008891 \times 10^{-26} \times 1.93294612 \times 10^{-19} \times 10^7$$

OHMS LAW REWRITTEN

$$V = I \times R$$

$$a \times 10^7 = \sqrt{F} \times \frac{I}{mass}$$

Acceleration, a as volts equals current, I the root of force, F times resistance, R .
Resistance, R is current, I per photon $mass$ about **one** 186-seed ether.

Particle	Mass, kg m	Force, N $F = m \times a$	Current, A $I = \sqrt{F \times 10^{-7}}$	Resistance, Ω $R = I/m$	Voltage, V $V \times 10^{-7} = a$
Proton	1.67×10^{-27}	9.795×10^7	3.1297	1.871×10^{27}	5.8556×10^{27}
Oxide	1.32×10^{-26}	6.1748×10^9	24.85141	1.871×10^{27}	4.6497×10^{28}

H-H Bond, H₂

The bond strength in terms of force, F between two protons,

$$I^2 = F \times 10^{-7} = G \frac{m_1 \times m_2}{r^2}$$

$$(3.1297)^2 = F \times 10^{-7}$$

$$F = 9.795 \times 10^7 \text{ N}$$

$$F = G \frac{m_1 \times m_2}{r^2}$$

$$9.795 \times 10^7 = 6.6742 \times 10^{-11} \times \frac{(1.672622216 \times 10^{-27})^2}{r^2} \text{ N}$$

$$r = 1.380668031 \times 10^{-36} \text{ m}$$

This radius belongs to 186-ether mass and is the source of the Boltzmann constant.

The O-H Bond

The bond strength in terms of force, F between one proton and oxide mass about one 186-seed ether,

$$I^2 = F \times 10^{-7} = G \frac{m_1 \times m_2}{r^2}$$

$$3.1297 \times 24.85141 = F \times 10^{-7}$$

$$F = 77.777 \times 10^7 \text{ N}$$

$$F = G \frac{m_1 \times m_2}{r^2}$$

$$F = 6.6742 \times 10^{-11} \times \frac{1.672622216 \times 10^{-27} \times 1.328 \times 10^{-26}}{r^2}$$

$$F = 77.777 \times 10^7 \text{ N}$$

$$r = 1.380668031 \times 10^{-36} \text{ m Boltzmann radius}$$

The O-O Bond, O₂

The bond strength in terms of force, F between two oxide masses, each about one 186-ether is,

$$I^2 = F \times 10^{-7} = G \frac{m_1 \times m_2}{r^2}$$

$$24.85141 \times 24.85141 = F \times 10^{-7}$$

$$F = 617.5 \times 10^7 N$$

$$F = G \frac{m_1 \times m_2}{r^2}$$

$$F = 6.6742 \times 10^{-11} \times \frac{1.328 \times 10^{-26} \times 1.328 \times 10^{-26}}{r^2}$$

$$F = 617.5 \times 10^7 N$$

$$r = 1.380668031 \times 10^{-36} m \text{ Boltzmann radius}$$

Conclusions

Newton's gravitation equation works on the atomic scale.

Newton's equation has been utilized by substituting force with ampere squared, mass with photon cluster mass about one 186-ether seed and distance with the Boltzmann radius.

The Boltzmann constant, k appears in every equation with temperature, T . In *ref. 1* it was shown how absolute temperature is force and the Boltzmann constant distance. Thus kT represents energy.

In this paper, the distance between two photon clusters each about one 186-ether seed {*ref. 3*} equals the Boltzmann radius.

$$(1.602176537 \times 10^{-19})^2 =$$

$$1.859222909 \times 10^{-9} \times 1.380668031 \times 10^{-36} \times 10^7$$

We know that one mole of a gas corresponds to the molar gas constant, R under the kinetic theory of gases. The molar gas constant divided by Avogadro's number gives the Boltzmann constant, k .

This paper is evidence of how Boltzmann's radius remains unchanged when different photon clusters bond; In other words, the density of matter

changes. We now can reason as to why one mole of any substance corresponds to Avogadro number of particles.

A huge outcome of this paper - **resistance is constant** for current to photon mass ratio,

Resistance, Ω
$R = I/m = c/q$
1.871×10^{27}

This ratio has a wide range of applications in topics ranging from superconductors to generators to sensor technology.

The grand unification of voltage as acceleration due to gravity is also evinced.

The meaning of oxidation state as the number of 186-ether seeds is proved. This new understanding will help rewrite the periodic table of elements.

Periodic table of elements

Topic	Current view	Paradigm shift
Oxidation state	Loss or gain of electrons	The number of 186-ether seeds
Atomic mass	Mass of the nucleus	Mass of a photon cluster
Ionization energy	Applied eV to remove shell electrons	Pair production
Energy levels	Energy of electrons	Energy of applied eV
Heat	Energy	Energy of 186 ether per q
Boltzmann Constant Mole concept	Appears with temperature in thermodynamics	Radius of 186-ether

References www.worldnpa.org

- [1] F.V. Fernandes, *Photo-Electric Conversions*, Parts 1-8
- [2] F. V. Fernandes, *Unification of Gravity with Electro-Magnetic Phenomena: GEM*
- [3] F. V. Fernandes, *Faraday's equation*