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Quantum physics as dynamic space-time differential calculus

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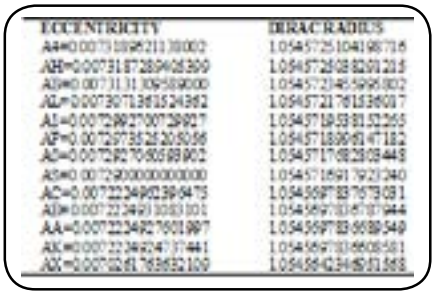
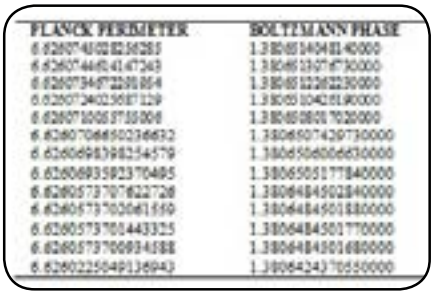
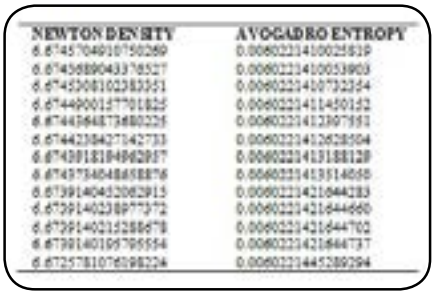
For the first time, the Unified Quantum Metric system was analytically developed without any artifacts, such as m, s, kg and without measurements at all. The energy diagrams of Feynman were replaced by calculations of harmonic space-time differentials. The main constants of quantum physics are, in fact, dynamic gradients of normal, half-normal, log-normal and truncated normal distribution of inverse radius of pulsing spiral. The Quantum Physics is the logarithmically compressed two-dimensional image of three-dimensional motion of wave fronts. One matrix equation [Gi]=2*PI*[Ri]*(1+[Ai]) where Ai, Ri, Gi are eccentricity, radius, density correspondingly, completely describe the 3D motion of wave fronts. Radii and eccentricities are bonded by the argument of information entropy Sqrt(2*PI*E) of the function of normal distribution Ri = 1+2/100*(E +Ai*(1+Sqrt(2*PI*E/100))). Lower limit of the nuclear rotational radius of pulsing spiral R = Integer{10^8*(C/10^7)^(1/64)/10^8 = 1.05456978 corresponds to upper limit of the harmonic rotational speed. C = (R+4*PI*C/10^18)^64*10^7 = 299792457.86759 (Maxwell unit) and K=E+AS+BS=2.7315999984590452 (upper limit of background temperature, Kelvin unit) link electrodynamics and thermodynamics. The number AS = 0.00729 = 1/100/(1.11111111...)^3=1/100/Sum{[137+(137-100)*N]/10^(3*N+2)} is the Schrodinger quantum binary inverse integral number. The number BS=Sum{602214183/10^(3*N+11)}=0.0060281699999…= 0.00602817 (Avogadro quantum decimal integral number) connects binary and decimal calculation systems The thirteen digital sequences are sufficient for estimating all fundamental quantum constants with practically unlimited accuracy.







The following equations functionally links binary, decimal and natural quantum calculation systems (bit-dit-nat): A1=1/137, A0=(PI*E/100)^2, A4=A0+4*(A1-A0), AH=1/(4^2*PI*E), AL=(1+59*Ln(10)), AF=1000/Inteer{1000*Sqrt(137^2+PI^2)}, RC=R+4*PI*C/10^18,RE=R+1/E/10^8, RA=R+1/(E+AS)/10^8, RK=R+1/K/10^8, NB=602214183/(1+4*PI/10^8)/10^8=6.022141073235 (reference number of differential entropy, lower limit of harmonic Avogadro unit), [Ni]=(Sqrt(8*PI*E/(8*PI*E+137^2))/(1+2*[Ai]/1000)-1/2/10^7)/10 (Avogadro energy entropy matrix), [MMi]=12-[Ai]/10 (molar mass entropy matrix), [KBI]=Cos(12-[Ai]/10)-Sin(12-[Ai]/10) (Boltzmann phase entropy matrix), [Vi]=[Ri]^64*10^7 (translation speed entropy matrix), AX=5/Root{X*E^X/(E^X-1)=5}=0.0070261763632109 (lower limit of relative inverse eccentrisity, Wien reference unit).

Biography

Eugene Machusky is currently Head of the Dept. of Technical Information Protection Systems, Scientific Director of Special Design Bureau "Storm" in National Technical University of Ukraine "Kyiv Polytechnic Institute" (KPI), Kyiv, Ukraine. He received his MEng (1974), PhD (1979), DSc (1989) from NTUU "KPI". He has been a Research Visitor at the University of North Wales (1983-1984, Bangor, UK), Visiting Professor at Harbin Technological University (2015-2018), China. He has also been an Author and Editor of Radio Engineering Encyclopaedia (Kyiv 1999; Moscow 2002, 2009, 2016), Articles in Great Ukrainian Encyclopedia (2016-2017). His scientific fields of interest includes microwave electronics, underwater acoustics, information security, mathematical linguistics.

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