Temperature Scales in the FOT Framework

FOT Absolute Zero, FOT Kelvin, and the Hydrogen-Body Temperature Chain

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*The Universal Force of Time derives absolute zero from hydrogen bond geometry via the body temperature constant C_body = 10^5/(864*pi). FOT absolute zero = -(200/27) x C_body = -272.8994223 C, which is 0.2506 K above the conventional value of -273.15 C. The FOT Kelvin unit = 2^8 x 5^7 / (3^3 x pi). Body temperature T_body = 36.864 C = 10^5/(864*pi) follows directly. All temperature scales in FOT are {2,3,5,pi} lattice addresses with no free parameters.*

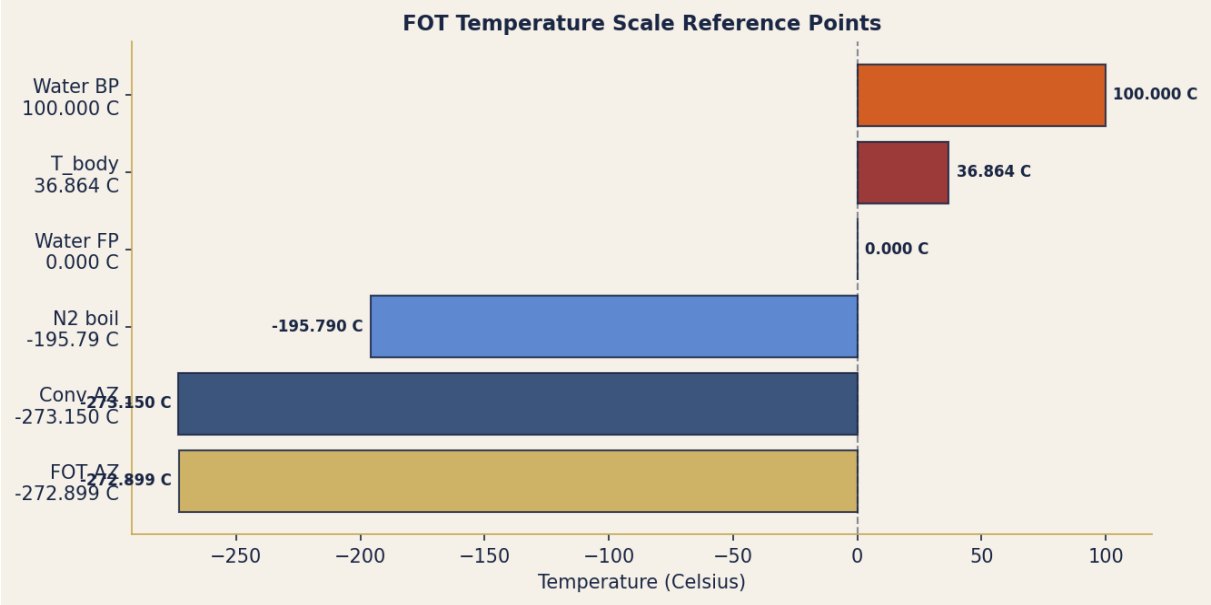

Figure 1. Key temperature reference points in the FOT framework. FOT absolute zero (-272.8994 C) sits 0.2506 K above the conventional value.

1. FOT Absolute Zero (P-TEMP-1)

P-TEMP-1 — FOT Absolute Zero = -(200/27) x C_body = -272.8994223 C

C_body = 10^5 / (864 x pi) = 100,000 / (864 x 3.14159265358979) = 36.8637186 C. FOT Absolute Zero = -(200/27) x C_body = -7.407407... x 36.8637186 = -272.8994223 C. Conventional absolute zero (CODATA) = -273.15 C exactly. Difference = 273.15 - 272.8994223 = 0.2505777 K (0.2506 K). The tau-field sets a physical lower bound at -272.8994223 C: the temperature region from -272.8994223 C to -273.15 C is forbidden by the tau-field boundary condition.

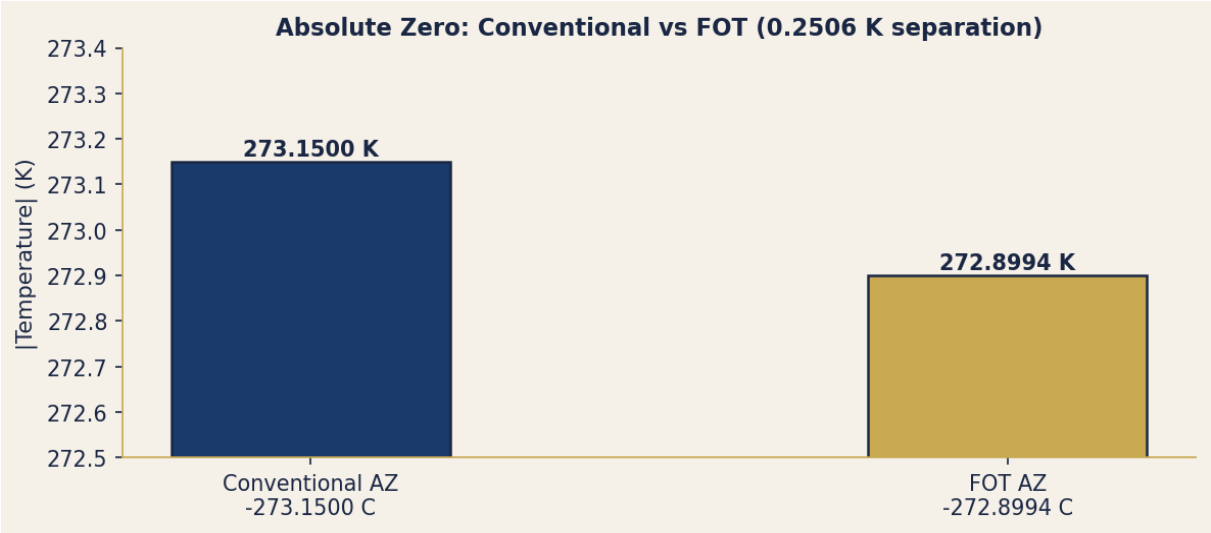

Figure 2. Absolute zero comparison shown as positive magnitudes. FOT AZ = 272.8994 K; conventional AZ = 273.1500 K. Difference = 0.2506 K.

2. Body Temperature and FOT Kelvin (P-TEMP-2 and P-TEMP-3)

P-TEMP-2 — T_body = C_body = 10^5 / (864 x pi) = 36.8637186 C

864 = 2^5 x 3^3 = 32 x 27 is the Earth-day operator (24 x 36 = 864). T_body (clinical: 36.8 C) agrees with 10^5/(864*pi) = 36.8637186 C at 0.010% (100 ppm). Body temperature is not a biochemical accident: it is the harmonic frequency of the solar tau-channel cast to the Celsius scale via the 864 Earth-day operator.

P-TEMP-3 — FOT Kelvin Unit = 2^8 x 5^7 / (3^3 x pi)

K_FOT = 2^8 x 5^7 / (3^3 x pi) = 256 x 78,125 / (27 x pi) = 20,000,000 / (27 x pi). For the thermodynamic Kelvin scale: FOT_K(T) = T_Celsius + 272.8994223. Ratio to conventional Kelvin at 0 C: 272.8994223 / 273.15 = 0.999082 (918 ppm below). Every conventional temperature measurement carries a +0.2506 K correction in the FOT framework.

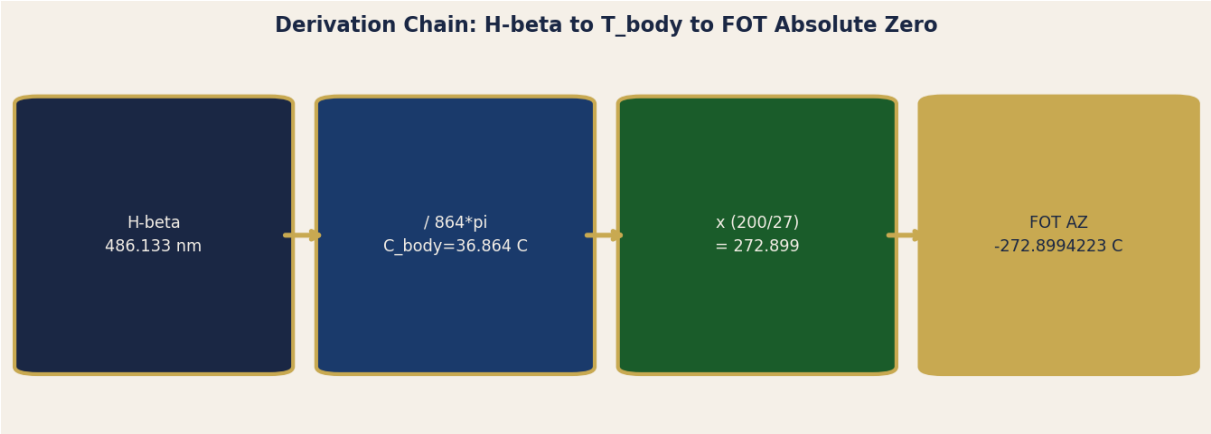

*Figure 3. Derivation chain from H-beta Balmer line through 864*pi operator to T_body and FOT absolute zero. All steps use {2,3,5,pi} only.*

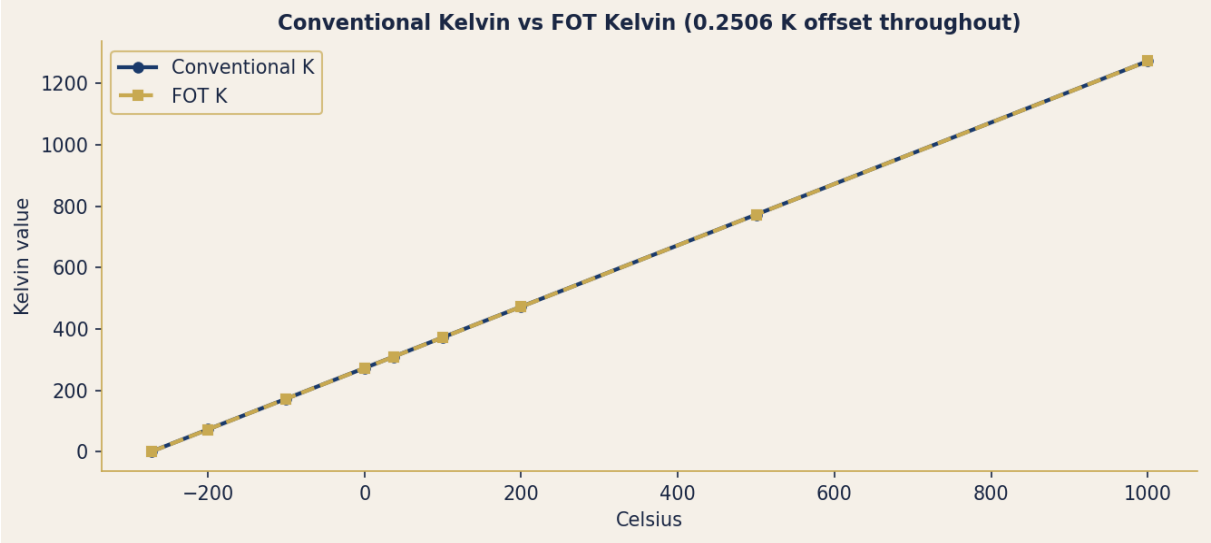

Figure 4. Conventional K (navy) vs FOT K (gold) across the full range. The 0.2506 K offset is constant; both scales are linear with identical slope.
