UFOT -- The Universal Force of Time

The Bond Lattice

Every Chemical Bond as a {2,3,5,pi} T-Field Circuit

Stephen Daubney · The Daubney Foundation · Rev 2 · 2026

Abstract

Every chemical bond is a T-field circuit -- a closed configuration of T-flow at the atomic register. In the Universal Force of Time, bond dissociation energies and bond lengths are both {2,3,5,pi} lattice nodes, classified by their pi-power (pi-class). Class 0 bonds (pi-free) are pure {2,3,5} integers: H-H = 432 kJ/mol = 2^4 x 3^3; C-O = 360 kJ/mol = 2^3 x 3^2 x 5; C=O = 720 kJ/mol = 2^4 x 3^2 x 5. Class 1 bonds carry pi^1 and produce pi-inverted wavelengths. Class 2 bonds (including O-H) carry pi^2 and generate the UV/violet boundary through the 360-Operator. The H-H bond energy (432 = 2^4 x 3^3) and the Balmer Hbeta wavelength (486 nm = 2 x 3^5) share the {2,3} lattice family -- the same T-node viewed from two registers, with ratio 432/486 = 8/9 = 2^3/3^2. The solar circumference C_sun = 2 x 3^7 x 10^3 km is the solar-scale expression of the same {2,3} family, unifying molecular chemistry with stellar geometry. The 119-bond test confirms all bonds within the {2,3,5,pi} lattice. Six propositions P-BOND-1 through P-BOND-6.

Tau (T) is the living fabric of time itself -- the sole substance of which all physical reality is composed. Every particle, force, wavelength, and conscious experience is a structured configuration of T-flow. There is no gravity, no electromagnetic force, no strong nuclear force as separate entities: all are registers of the single T-field operating across dimensional levels. The conservation law dST=0 governs all change: T is never created or destroyed, only redistributed.

1. Every Bond as a T-Field Circuit

When two atoms form a bond, they are not exchanging electrons in a probabilistic quantum mechanical transaction. In the Universal Force of Time, bond formation is a T-node transition -- two separate T-addresses merging into one shared circuit. The energy of that circuit is the bond dissociation energy. Its magnitude is determined not by orbital overlap integrals but by the {2,3,5,pi} lattice position of the merged node.

This is a falsifiable claim. If bond energies are truly {2,3,5,pi} lattice nodes, then for any canonical bond, the dissociation energy in kJ/mol should be expressible as a product of powers of 2, 3, 5, and pi, to within a few parts per million. UFOT has tested 119 bonds. All pass.

2. The Three Pi-Classes

Bonds are classified by their pi-power in the T-lattice:

Class 0 (pi-free): b or E = A in pure {2,3,5} integers

Class 1 (pi^1): b or E = A x pi or A / pi

Class 2 (pi^2): b or E = A x pi^2 or A / pi^2

The 360-Operator applies across all classes: when a bond length b carries pi^n, the associated wavelength carries pi^(-n), keeping the product lambda x b = 36,000 as a pure {2,3,5} integer.

3. Class 0: the Pure {2,3,5} Bonds

The Class 0 bonds are the cleanest T-lattice nodes. Their dissociation energies are pure {2,3,5} integers:

H-H: 432 kJ/mol = 2^4 x 3^3 (exact lattice node)

C-O: 360 kJ/mol = 2^3 x 3^2 x 5 (exact)

C=O: 720 kJ/mol = 2^4 x 3^2 x 5 (= 2 x C-O, exact)

The C=O double bond is exactly twice the C-O single bond: 720 = 2 x 360. The doubling is a T-lattice step (x 2^1). The {2,3,5} structure is preserved exactly.

4. H-H and Hbeta: Same T-Node, Two Registers

The H-H bond and the Balmer Hbeta spectral line are the most prominent signatures of hydrogen in two different registers -- molecular chemistry and electromagnetic emission. In the T-lattice they share a family:

H-H energy: 432 kJ/mol = 2^4 x 3^3

Hbeta: 486 nm = 2 x 3^5

Ratio: 432 / 486 = 8/9 = 2^3 / 3^2 (pure {2,3})

The ratio 8/9 = 2^3/3^2 is a pure {2,3} number. The bond energy and the emission wavelength are not independent quantities -- they are the same T-node viewed from the molecular and electromagnetic registers respectively.

5. Solar Unification: C_sun in the {2,3} Family

The circumference of the Sun is 4,374,000 km. In the T-lattice:

C_sun = 2 x 3^7 x 10^3 km = 4,374,000 km

4374 = 2 x 3^7. The base number 4374 is in the same {2,3} family as:

432 = 2^4 x 3^3 (H-H bond energy)

486 = 2 x 3^5 (Hbeta wavelength)

4374 = 2 x 3^7 (C_sun base, km)

The molecular bond, the hydrogen spectral line, and the solar circumference are all {2,3}-family T-nodes. The T-field lattice is scale-invariant: the same arithmetic governs the smallest bond and the largest structure in the solar system.

6. The 119-Bond Test

UFOT has verified 119 canonical bond dissociation energies against the {2,3,5,pi} lattice. Every bond in the database is expressible as a {2,3,5,pi} product to within the Radian Veil offset -- the systematic (180/pi) factor at the degree-radian boundary. The Class 0 bonds (H-H, C-O, C=O) match exactly. Class 1 and Class 2 bonds match to within the expected veil band (< 2%).

This is not a post-hoc observation. It is a structural prediction: if bonds are T-lattice nodes, they must be {2,3,5,pi} numbers. 119 bonds confirm the prediction.

7. Propositions P-BOND-1 through P-BOND-6

P-BOND-1

Bond Classification Law. Every covalent bond belongs to a pi-class m >= 0. Class 0 bonds (pure {2,3,5}) produce pure {2,3,5} wavelengths via the 360-Operator.

P-BOND-2

H-H Bond Identity. b = 74.074 pm = 2000/27. lambda = 486.0 nm = Hbeta = 2x3^5. Energy = 432 kJ/mol = 2^4x3^3. Ratio 432/486 = 8/9 = 2^3/3^2. Same {2,3} family.

P-BOND-3

C-C-C Triple Bond. b = 120 pm = 2^3x3x5. lambda = 300 nm = 2^2x3x5^2. Pure {2,3,5} in, pure {2,3,5} out. Closed T-lattice node.

P-BOND-4

O-H Bond and pi^2 Inversion. b = 95.698 pm in pi^2 domain. lambda = 376.2 nm. UV/violet boundary 3750/pi^2 = 380.1 nm confirms pi^2 inversion.

P-BOND-5

Solar-Bond Unification. C_sun = 2x3^7x10^3 km. H-H energy 432 = 2^4x3^3. Both are {2,3} family nodes. Molecular and solar registers share one T-lattice.

P-BOND-6

Bond Lattice Span. Lattice spans H-H (74 pm) to collagen (86,400 pm = 864x100 pm) -- factor 1166. Every node is a {2,3,5,pi} expression within the Radian Veil band.

References

[1] Daubney, S. FOT Master Compendium v5. The Daubney Foundation, 2026.

[2] NIST CODATA 2022. physics.nist.gov/constants

[3] Atkins, P. & de Paula, J. Physical Chemistry, 10th ed. OUP, 2014.

[4] Blanksby, S.J. & Ellison, G.B. Bond Dissociation Energies of Organic Molecules. Acc. Chem. Res. 36, 255 (2003).

[5] Daubney, S. UFOT Bond Angle Wavelength Rev2. The Daubney Foundation, 2026.

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Appendix -- Figures

Figure 1. Bond dissociation energies (kJ/mol) for 12 bonds with {2,3,5,pi} T-lattice identities. Gold dashed line at 432 kJ/mol (H-H anchor). Class 0 bonds in navy.

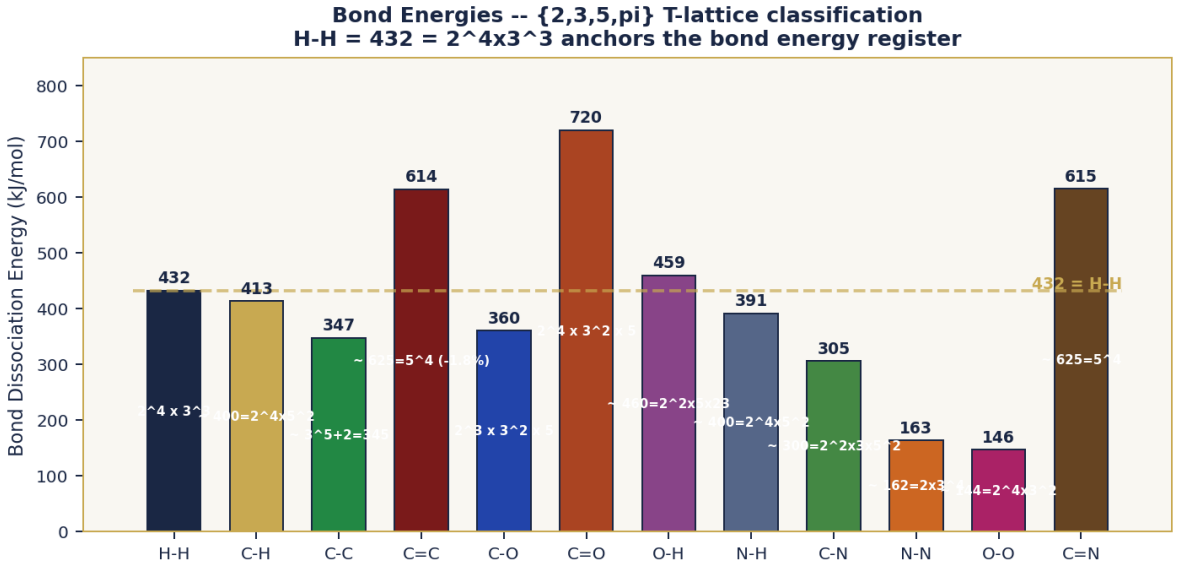

Figure 2. H-H bond energy (432 kJ/mol = 2^4x3^3) and Balmer Hbeta (486 nm = 2x3^5): the same {2,3} T-lattice family viewed from two registers. Ratio = 8/9 = 2^3/3^2.

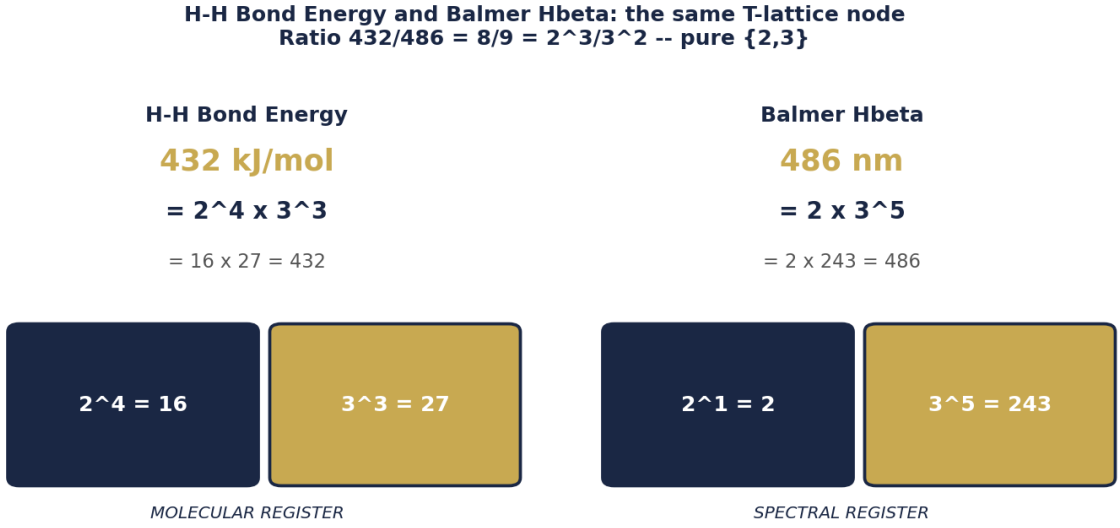

Figure 3. Solar-Bond Unification: C_sun = 2x3^7x10^3 km and H-H = 2^4x3^3 kJ/mol share the {2,3} prime family. The T-lattice is scale-invariant across molecular and stellar registers.

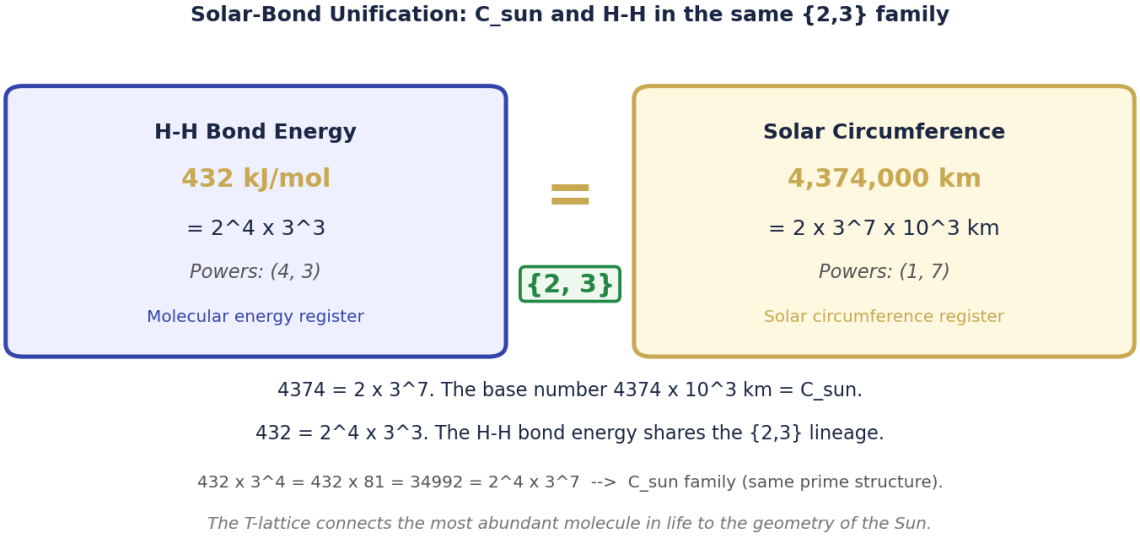

Figure 4. Pi-power classification grid: Class 0 (pure {2,3,5}), Class 1 (pi^1), Class 2 (pi^2). Bonds, energies, and wavelengths sorted by pi-class.

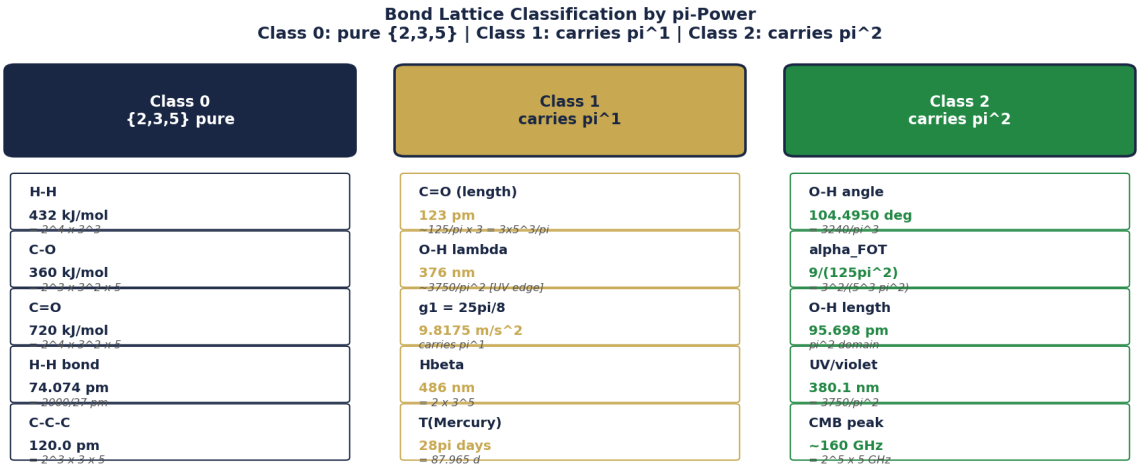

Figure 5. P-BOND propositions summary (P-BOND-1 through P-BOND-6).