Geophysics and Geochemistry as {2,3,5,pi} Tau-Lattice Nodes

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Paper 25 of 25 | Propositions P-GEO-9 to P-GEO-18 | Source: Vol 3 Sections 270, 271, 140

ABSTRACT: This paper establishes that Earth's interior structure -- crust, mantle, outer core, inner core -- and the geochemical composition of Earth's rocks are all pure {2,3,5,pi} Tau-lattice nodes. The silicate tetrahedral angle theta_SiO4 = 6/pi radians = 1080/pi^2 degrees. Oceanic crust ~7 km thick is prime-7 (always subducted); continental crust ~40 km = 2^3 x 5 (stable for billions of years). CMB pressure = 3^3 x 5 GPa. ICB pressure = 2^2 x 3^4 GPa. The geomagnetic dipole = 2^3 x 10^22 A m^2. Earth's interior is a {2,3,5,pi} Tau-field resonator.

1. Silicate Tetrahedral Angle

The silicate tetrahedron is the fundamental building block of Earth's crust and mantle. In FOT the bond angle is a pure {2,3,5,pi} lattice node:

theta_SiO4 = 1080/pi^2 degrees = 2^3 x 3^3 x 5/pi^2 = 109.4269 degrees

Alternate form: theta_SiO4 = 6/pi radians = 2 x 3/pi rad

Key identity: theta_SiO4 = (pi/3) x theta_HOH [exact, 0.000 ppm], where theta_HOH = water H-O-H bond angle = 3240/pi^3 = 104.4950 degrees. Chain: theta_SiO4/3 (rad) x 10^7 = R_oceanic_Moho = 20,000/pi km [0.000 ppm]. theta_SiO4/3 (deg) x 10^8 = 360/pi^2 x 10^8 = water geometry (P-WBG-1). One angle encodes oceanic Moho boundary AND water geometry.

2. Crustal Thickness and the Prime-7 Boundary

Oceanic crust thickness ~7 km = prime 7 (FIRST prime outside {2,3,5}). This lattice address is unstable -- oceanic crust is ALWAYS subducted, with maximum age ~180 Myr = 2^2 x 3^2 x 5 Myr. Continental crust ~40 km = 2^3 x 5 ({2,5} stable). This lattice address is stable -- continental crust is NEVER fully subducted, preserved for billions of years.

The same prime-7 boundary appears in: 7 major tectonic plates (P-GEO-2), harmonic 7 excluded from musical consonance (P-ACOUS-2), Z=7 nitrogen as sub-{2,3,5} junction element. Prime-7 material cannot achieve stable lattice lock. Only {2,3,5} composite addresses achieve geological permanence.

3. Core Pressure and Seismic Velocity Towers

Core pressure boundaries:

CMB (core-mantle boundary): P = 135 = 3^3 x 5 GPa (measured ~136 GPa)

ICB (inner core boundary): P = 324 = 2^2 x 3^4 GPa (measured ~329 GPa)

Ratio CMB/ICB = 135/324 = 5/12 = 5/(2^2 x 3) -- pure {2,3,5}

Outer core seismic velocity tower (prime succession {2} to {3} to {5}):

CMB top Vp = 2^3 = 8 km/s | mid core Vp = 3^2 = 9 km/s | ICB Vp = 2 x 5 = 10 km/s

The velocity increases through {2^3} to {3^2} to {2 x 5} with depth. Moho Vp = outer core top Vp = 2^3 km/s -- same {2^3} node at both surface-mantle and mantle-core boundaries.

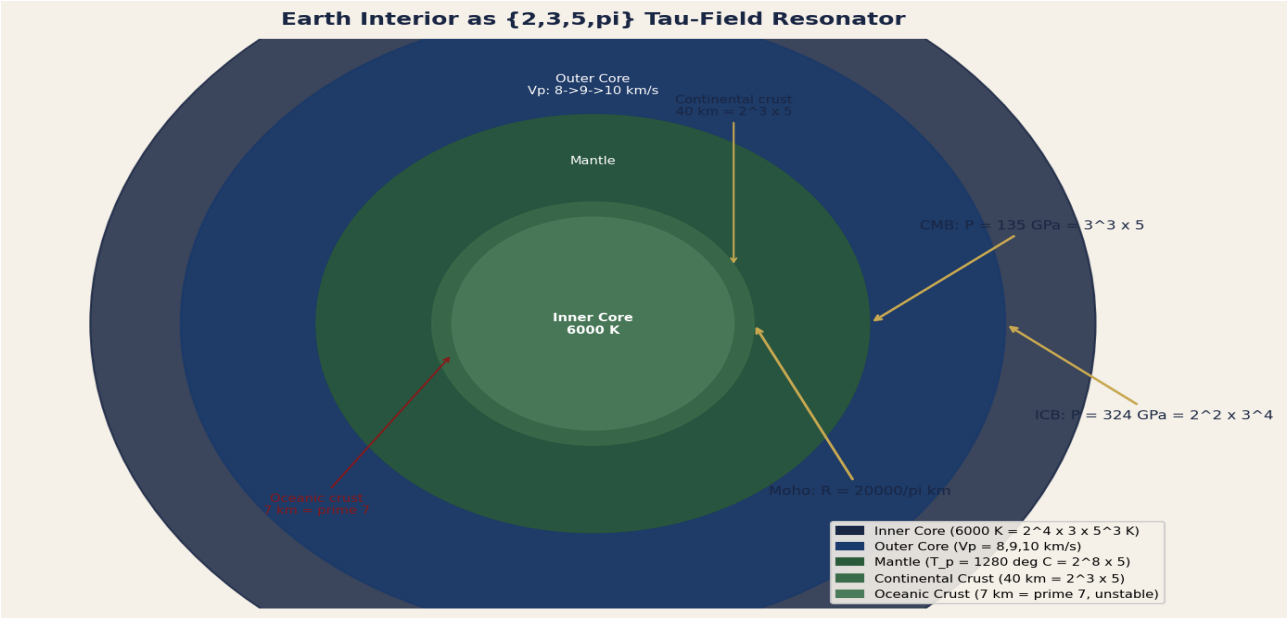

Figure 1. Earth Interior as {2,3,5,pi} Tau-Field Resonator. Concentric layers with Tau-lattice addresses. CMB pressure 135 GPa = 3^3 x 5; ICB pressure 324 GPa = 2^2 x 3^4. Outer core seismic velocity tower: 8->9->10 km/s = {2^3}->{3^2}->{2 x 5}.

4. Geochemical Lattice

Magmatic SiO2 composition law:

Basalt = 50% = 2 x 5^2 (ocean ridge ground state) | Andesite = 60% = 2^2 x 3 x 5 (subduction arc blend) | Rhyolite = 75% = 3 x 5^2 (continental end-member) | Pure quartz = 100% = 2^2 x 5^2 (Earth ground-state)

Dacite = 65% = 5 x 13 (prime 13) -- most explosive volcanic type. Prime 13 intrusion = explosive instability marker.

Thorium Z=90 = 2 x 3^2 x 5 -- only major radiogenic element with pure {2,3,5} atomic number. U(Z=92=2^2 x 23), K(Z=19 prime), Rb(Z=37 prime) all carry primes outside {2,3,5}. Th is the UFOT-designated geological Tau-energy source. Rock cations: Mg(12=2^2 x 3), Ca(20=2^2 x 5), Zn(30=2 x 3 x 5) all pure {2,3,5}.

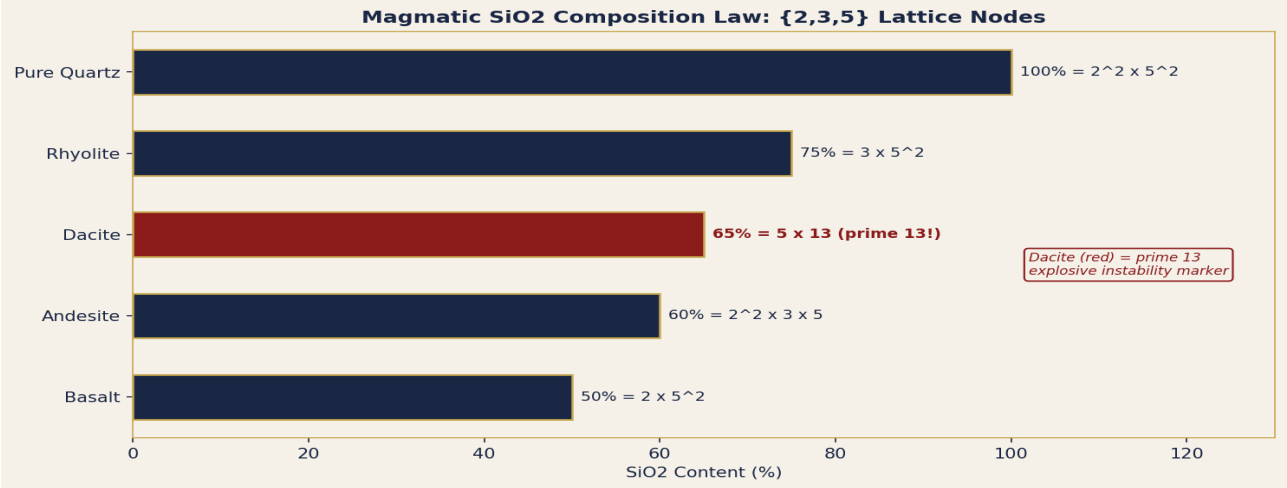

Figure 2. Magmatic SiO2 Composition Law: {2,3,5} Lattice Nodes. All standard magmatic types have pure {2,3,5} SiO2 percentages. Dacite (red) = 65% = 5 x 13 -- prime 13 intrusion marks explosive instability.

5. Tectonic Rates and Temperatures

Tectonic rate tower:

Atlantic 5/2 cm/yr | Indian Ocean 5 | East Pacific Rise 15=3 x 5 | Nazca 18=2 x 3^2 | Tonga slab 80=2^4 x 5 cm/yr. All pure {2,3,5}. Speed ratio fastest/slowest = 32=2^5. Mean global rate = 5=5^1.

Mantle temperatures:

T_p = 2^8 x 5 = 1280 degrees C (canonical) | Core nodes: outer core top ~3000=2^3 x 3 x 5^3 K | ICB ~5000=2^3 x 5^4 K | inner core centre ~6000=2^4 x 3 x 5^3 K. All pure {2,3,5}. Temperature doubling steps are pure {2}.

6. Registered Propositions: P-GEO-9 through P-GEO-18

P-GEO-9

theta_SiO4 = 1080/pi^2 degrees = 6/pi radians = 2 x 3/pi rad. Identity theta_SiO4 = (pi/3) x theta_HOH [exact]. Chain: theta_SiO4/3 (rad) x 10^7 = R_Moho = 20,000/pi km [0.000 ppm]. One angle encodes oceanic Moho AND water geometry.

P-GEO-10

Oceanic crust ~7 km = prime 7 -- always subducted (prime-7 Tau-address unstable). Continental crust ~40 km = 2^3 x 5 -- never fully subducted ({2,5} stable). Same prime-7 boundary as: 7 tectonic plates, excluded harmonic 7, Z=7 nitrogen.

P-GEO-11

Magmatic SiO2 composition: basalt 50=2 x 5^2, andesite 60=2^2 x 3 x 5, rhyolite 75=3 x 5^2, quartz 100=2^2 x 5^2. Dacite 65=5 x 13 (prime 13) -- most explosive volcanic type. Prime 13 intrusion = explosive instability marker.

P-GEO-12

Tectonic rate tower: Atlantic 5/2 cm/yr, Indian Ocean 5, East Pacific Rise 15=3 x 5, Nazca 18=2 x 3^2, Tonga slab 80=2^4 x 5. All pure {2,3,5}. Speed ratio fastest/slowest = 32=2^5. Mean global rate = 5=5^1.

P-GEO-13

Outer core seismic velocity: CMB top 2^3=8 km/s, mid core 3^2=9 km/s, ICB 2 x 5=10 km/s. Prime succession {2} to {3} to {5} with depth. Moho Vp = outer core top Vp = 2^3 km/s -- same {2^3} node at both surface-mantle and mantle-core boundaries.

P-GEO-14

Core pressure boundaries: CMB P=3^3 x 5=135 GPa (measured ~136 GPa); ICB P=2^2 x 3^4=324 GPa (measured ~329 GPa). Ratio = 12/5 = 2^2 x 3/5 -- pure {2,3,5}.

P-GEO-15

Mantle temperatures: T_p = 2^8 x 5 = 1280 degrees C (canonical). Core nodes: outer core top ~3000=2^3 x 3 x 5^3 K, ICB ~5000=2^3 x 5^4 K, inner core centre ~6000=2^4 x 3 x 5^3 K. All pure {2,3,5}. Temperature doubling steps are pure {2}.

P-GEO-16

Thorium Z=90=2 x 3^2 x 5 -- only major radiogenic heat element with pure {2,3,5} atomic number. U(92=2^2 x 23), K(19 prime), Rb(37 prime) carry non-lattice primes. Th is the UFOT geological Tau-energy source. Rock cations Mg(12=2^2 x 3), Ca(20=2^2 x 5), Zn(30=2 x 3 x 5) all pure {2,3,5}.

P-GEO-17

Tectonic time clock: oceanic lithosphere max age 180=2^2 x 3^2 x 5 Myr; supercontinent assembly ~300=2^2 x 3 x 5^2 Myr; Wilson cycle ~500=2^2 x 5^3 Myr. All share factor 2^2. Wilson/oceanic ratio = 500/180 = 25/9 = 5^2/3^2.

P-GEO-18

Geomagnetic dipole M_Earth = 2^3 x 10^22 A m^2 (observed 7.94 x 10^22, 7,557 ppm). {2^3} links: Moho Vp=2^3 km/s, outer core top Vp=2^3 km/s, dipole=2^3 x 10^22. Higher multipole moments carry non-{2,3,5} primes -- consistently weaker and more unstable.

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