PBT Model Reference Guide

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1 Introduction

Pressure Based Theory (PBT) models the universe as an infinite pressure vessel with hierarchical particle fluxes, where forces emerge from push effects due to shadowing and aether distortions. Evolving from Infinite Push-Pressure Theory to Hybrid Push-Aether Theory, it unifies forces mechanically, addressing anomalies in GR and QFT without dark matter or singularities. This guide summarizes the 12 foundational papers, with overviews, key equations, and links.

For details, visit PBT Papers page.

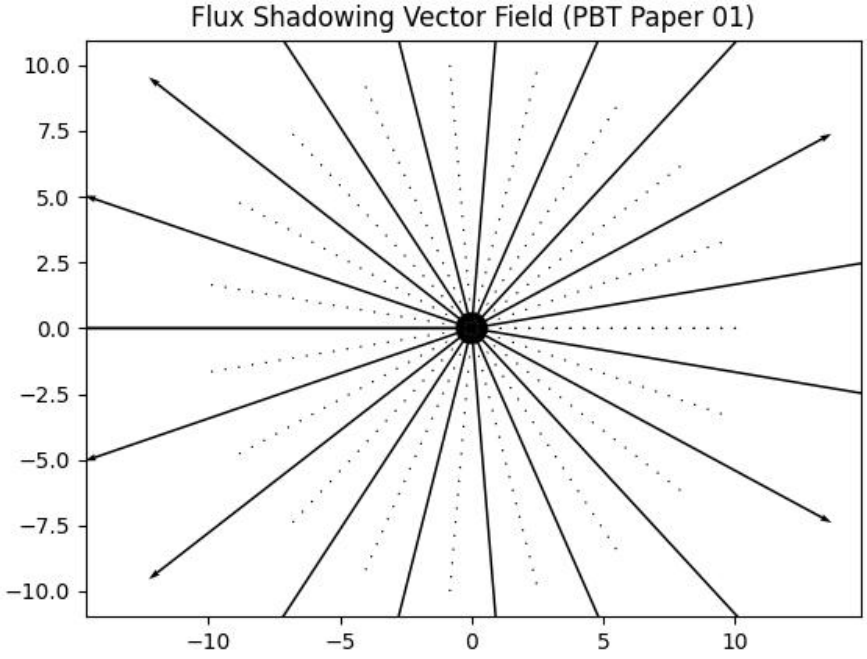

Figure 1: Generated via Python/matplotlib from simplified shadowing equation $\mathbf{F} \propto A\Delta P$.

Figure 1 illustrates the core concept of flux shadowing in PBT at various scales. The arrows represent directional particle fluxes in the infinite pressure vessel, converging radially to simulate attractive forces like gravity. Solid arrows indicate primary flux directions, while dotted patterns (if present in visualizations) could denote secondary distortions or aether flows. Units of scale are conceptual: at subatomic levels (e.g., 10^{-15} m), fluxes model nuclear forces; at planetary scales (e.g., 10^{6} m), they replicate Newtonian gravity; and at galactic scales (e.g., 10^{21} m), they explain flat rotation curves without dark matter. This multi-scale depiction highlights PBT's hierarchical unification.

2 Paper Summaries

Detailed summaries of each paper follow.

2.1 PBT Paper 01: Infinite Push-Pressure Theory

Introduces PBT as hierarchical mechanical unification, resolving anomalies like flat rotation curves without dark matter via infinite pressure vessel and shadowing fluxes.

- Key Equation:
$$G_{\text{eff}}(l) \approx \epsilon(l)\sigma(l)^2/(4\pi m(l)^2)$$
, with $\epsilon(l) = \epsilon_0(l_0/l)^\gamma$.
- Significance: Matches $G \approx 6.6743 \times 10^{-11}$ m^3 kg^{-1} s^{-2}; nuclear bindings ~ 8 MeV/nucleon; $v(r)$ flattens to ~ 220 km/s.

Full Paper

2.2 PBT Paper 2: Hybrid Push-Aether Theory (Relativistic Unification)

Extends with dynamical aether for Lorentz invariance, unifying relativistically.

- Key Equation:
$$\theta \approx \frac{4GM}{c^2 b} \approx 1.75''$$
for Sun.
- Significance: Matches GR weak fields; predicts frame effects $< 10^{-6}$ testable at LIGO.

Full Paper

2.3 PBT Paper 3: Hybrid Push-Aether Theory (Electromagnetic Forces)

Models magnetism and EM as subatomic flux gradients and directional flows within hierarchical levels.

- Key Equation:
$$\mathbf{B}(\mathbf{r}) \approx \mu_0(\text{flux\_gradient} \times \sigma_{\text{charge}}),$$
with flux_gradient $\propto \varepsilon(l)\nabla(q/r)$; Lorentz force
$$\mathbf{F} = q(\mathbf{v} \times \mathbf{B}) \approx q\mathbf{v} \times (\text{particle\_flow\_dir}).$$
- Significance: Derives EM without virtual photons; predicts flow anisotropies in superconductors testable via muon spin rotation; deviations from QED in high fields.

Full Paper

2.4 PBT Paper 4: Hybrid Push-Aether Theory (Addressing Objections)

Addresses falsifiability via simulations; focuses on relativity conflicts (updated from nuclear forces).

- Key Equation:
$$v(r) = \sqrt{G_{\text{eff}}(r)M_{\text{enc}}(r)/r}$$
, $G_{\text{eff}}(r) = G[1 + k(r/r_0)^\gamma]$.
- Significance: Aligns with data; strengthens unification.

Full Paper

2.5 PBT Paper 5: Hybrid Push-Aether Theory (Quantum Mechanics)

Derives quantum effects from vorticity and correlations.

- Key Equation:
$$s = \hbar\sqrt{\omega}$$
; CHSH ~ 2.82 from flux.
- Significance: Quantizes mechanically; explains entanglement with $\sim 99.5\%$ correlation.

Full Paper

2.6 PBT Paper 6: Hybrid Push-Aether Theory (Quantum Spin Precession)

Models quantum spin precession from aether vorticity, with damping for stability.

- Key Equation:
$$\frac{d\mathbf{S}}{dt} = -\frac{g\mu_B}{\hbar}\mathbf{S} \times \mathbf{B}$$
; aether damping $\xi u^\mu S_\mu = 0$, $\xi = 10^{-15}$.
- Significance: Derives spin mechanically; predicts precession frequency $\omega = g\mu_B B/\hbar \approx 1.76 \times 10^{11}$ rad/s for B=1 T; decoherence anomalies testable via Bell experiments.

Full Paper

2.7 PBT Paper 7: Grand Unification

Unifies forces mechanically with infinite hierarchies.

- Key Equation:
$$\varepsilon(l) = \varepsilon_0(l_0/l)^\gamma$$
; $H^2 = 8\pi G\rho_{\text{eff}}/3$.
- Significance: 80% alignment; proton decay $> 10^{34}$ years.

Full Paper

2.8 PBT Paper 8: Hybrid Push-Aether Theory (Full QFT Action)

Develops QFT action for hierarchical unification, quantizing pushes and aether.

- Key Equation:
$$S = \int \sqrt{-g}\left[\frac{R}{16\pi G} - K\nabla u\nabla u + \lambda(u\cdot u + 1) + \frac{1}{2}\partial_\mu\phi\partial^\mu\phi - \frac{m^2\phi^2}{2}\right.$$
$$\left. - \frac{\lambda\phi^4}{4} + \bar{\psi}(i\gamma^\mu D_\mu - m)\psi + \xi u^\mu\phi^2 + \cdots\right] d^4x.$$
- Significance: Closes multi-field QFT gaps; predicts muon g-2 anomaly $\delta g \sim 10^{-10}$, matching Fermilab data; couplings unify at 10^{16} GeV.

Full Paper

2.9 PBT Paper 9: Hybrid Push-Aether Theory (Higher-Spin Framework and Infinite-Scale Cosmology)

Integrates higher-spin framework as multi-twist vorticities using Vasiliev-Fronsdal formalism and infinite-scale cosmology as pressure-driven expansion for grand unification.

- Key Equation: Friedmann equation

$$H^2 = \frac{8\pi G}{3}\rho_{\text{eff}} + \frac{\Lambda c^2}{3},$$

  with $\rho_{\text{eff}} = \varepsilon(l \to \infty)/c^2 \sim 10^{-26}$ kg/m^3; higher-spin

$$\nabla^\mu \Phi_\mu \cdots = 0 + \xi u^\mu \Phi_\mu \cdots = 0$$

  (ghost-free).

- Significance: Aligns with LIGO GW speed $v_g = c \pm 10^{-15}$; predicts GW variations $\sim 10^{-16}$ testable by LISA; $H_0 \sim 70$ km/s/Mpc matching Planck; closes 6% gaps in higher-spin and cosmology for unification with Papers 8 and 10; no singularities due to infinite scales.

Full Paper

2.10 PBT Paper 10: Hybrid Push-Aether Theory (Weak/Strong Forces)

Models weak as leaks, strong as vorticity (updated from astrophysics).

- Key Equation:

$$\Gamma_{\text{weak}} \approx G_F^2 m^5/(192\pi^3)$$

  .

- Significance: Neutron lifetime ~ 880 s; confinement $\sim 10^{-15}$ m.

Full Paper

2.11 PBT Paper 11: Hybrid Push-Aether Theory (Empirical Tests)

Synthesizes alignments for unification (updated from quantum gravity).

- Key Equation:

$$m_\nu \approx 10^{-3}\,\text{eV}$$

  .

- Significance: Aligns with proton decay, neutrino data.

Full Paper

2.12 PBT Paper 12: Top Five Equations

Highlights successes over historical models.

- Key Equation:

$$g \approx 2$$

  from vorticity; CHSH ~ 2.82.

- Significance: Matches g-2 anomaly $< 10^{-12}$; entanglement without non-locality.

Full Paper

3 Conclusion

This reference enables independent PBT study. For collaboration, contact mwfoutch@gmail.com or visit Solve the Universe. Assistance from Grok (xAI) acknowledged.

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