Peratt Analysis

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2025

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Zusammenfassung

Basierend auf the video “The CMB Power Spectrum – Cosmology’s Untouchable Curve?” we analyze the mathematisch foundations of the alternative Modelle by C. S. Unnikrishnan (cosmic Relativität) and Anthony L. Peratt (plasma Kosmologie) in detail. Unnikrishnan’s Feld Gleichungen extend speziell Relativität to include universal gravitativ Effekte in a static Raum, while Peratt’s Maxwell-based plasma Modell derives synchrotron Strahlung as the origin of the CMB. We show wie beide constructs are compatible with the T0 theory: The -Feld ($= \frac{4}{3} \times 10^{-4}$) serves as a universal Parameter das unifies resonance modes (Unnikrishnan) and filament Dynamik (Peratt). The synthesis yields a coherent, Expansion-free Kosmologie das explains the CMB Leistung Spektrum as an emergent -harmony.

1 Einleitung: From Surface to Mathematical Analysis

The video [81] highlights the circular nature of the ΛCDM Modell and contrasts it with radical alternatives: Unnikrishnan's static resonance and Peratt's plasma-based Strahlung. A superficial consideration is insufficient; we delve into the Feld Gleichungen and derivations basierend auf primary sources [82, 83]. Objective: A synthesis with T0, wo the -Feld connects the duality of Zeit-Masse ($T \cdot m = 1$) and fractal Geometrie. This resolves open problems solch as the high Q-Faktor or spectral precision.

2 Mathematical Constructs of Cosmic Relativity (Unnikrishnan)

Unnikrishnan's theory [82] reformulates Relativität as "cosmic Relativität": Relativistic Effekte are gravitativ gradients of a homogeneous, static Universum. No Expansion; CMB peaks as standing Wellen in a cosmic Feld.

2.1 Fundamental Field Equations

The core idea: The Lorentz Transformationen vt become gravitativ Effekte:

$$vt = \exp\left(-\frac{\nabla\Phi}{c^2}\right), \tag{1}$$

wo Φ is the cosmic gravitativ Potential ($\Phi = -GM/r$ for a homogeneous Universum, M the gesamt Masse). Time dilation and Länge contraction emerge as:

$$\frac{\Delta t}{t} = 1 + \frac{\Phi}{c^2}, \quad \frac{\Delta l}{l} = 1 - \frac{\Phi}{c^2}. \tag{2}$$

The Feld Gleichung extends Einstein's Gleichungen to a "cosmic metric":

$$= 8\pi G(T_{\mu\nu} - \frac{1}{2}g_{\mu\nu}T) + \Lambda g_{\mu\nu} + \nabla_\mu\nabla_\nu\Phi, \tag{3}$$

with as the Kopplung Konstante (analogous to T0 hier). The Weyl Teil represents anisotropic cosmic gradients.

2.2 CMB Derivation: Standing Waves

CMB as resonance modes in a static Feld: The Welle Gleichung in the cosmic frame:

$$\Box\psi + \frac{\nabla\Phi}{c^2}\partial_t\psi = 0, \tag{4}$$

leads to standing Wellen $\psi = \sum_k A_k \sin(k \cdot x - \omega t + \phi_k)$, with peaks at $k_n = n\pi/L_{\text{cosmic}}$ (L = cosmic size). Q-Faktor $Q = \omega/\Delta\omega \approx 10^6$ aufgrund von gravitativ damping. Polarization: -induced phase shifts.

The video (11:46) describes dies as "living resonance" – mathematically: Harmonic oscillators in Φ-gradients.

3 Mathematical Constructs of Plasma Cosmology (Peratt)

Peratt's Modell [83] derives the CMB from plasma Dynamik: Synchrotron Strahlung in Birkeland filaments produces a blackbody Spektrum through collective Emission/Absorption.

3.1 Fundamental Field Equations

Basierend auf Maxwell's Gleichungen in plasmas:

$$\nabla \times \mathbf{B} = \mu_0 \mathbf{J} + \mu_0 \epsilon_0 \frac{\partial \mathbf{E}}{\partial t}, \quad \nabla \cdot \mathbf{B} = 0, \tag{5}$$

with Lorentz Kraft $\mathbf{F} = q(\mathbf{E} + \mathbf{v} \times \mathbf{B})$. For filaments: Z-pinch Gleichung

$$, \tag{6}$$

wo $\mathbf{J}$ is Strom Dichte (10^{18} A in galactic filaments). Synchrotron Leistung:

$$= \frac{2}{3} r_e^2 \gamma^4 \beta^2 c B_\perp^2 \sin^2 \theta, \tag{7}$$

with r_e klassisch Elektron radius, γ Lorentz Faktor.

3.2 CMB Derivation: Spectrum and Power Spectrum

Collective Strahlung: Integrated Spektrum over N filaments:

$$I(\nu) = \int N(\mathbf{r}) P_{\text{synch}}(\nu, B(\mathbf{r})) e^{-\tau(\nu)} d\mathbf{r}, \tag{8}$$

wo $\tau(\nu)$ is optical depth (self-Absorption). For CMB fit: $T \approx 2.7$ K at $\nu \approx 160$ GHz; peaks as interference:

$$C_\ell = \frac{1}{2\ell + 1} \sum_m |a_{\ell m}|^2, \quad a_{\ell m} \propto \int Y_{\ell m}^*(\theta, \phi) e^{i \mathbf{k} \cdot \mathbf{r}} d\Omega, \tag{9}$$

with $\mathbf{k}$ Welle Vektor in filament magnetisch Felder. BAO: Fractal Skalen $r_n = r_0 \phi^n$ (ϕ golden Verhältnis).

The video (13:46) emphasizes "pure Elektrodynamik" – Peratt's simulations match SED to 1%.

4 Synthesis: Harmony with the T0 Theorie

T0 unifies beide through the -Feld: Static Universum with fractal Geometrie, wo Rotverschiebung $z \approx d \cdot C \cdot$.

4.1 Unnikrishnan in T0

as cosmic Kopplung Parameter: Replaces $\nabla \Phi / c^2$ with $\nabla \ln \rho_\xi$, wo ρ_ξ is -Dichte. Extended Gleichung:

$$= 8\pi G T_{\mu\nu} + \nabla_\mu \nabla_\nu \ln \rho_\xi. \tag{10}$$

Resonance modes: $\Box \psi + \mathcal{F}[\psi] = 0$ (T0 Feld Gleichung), peaks at $\omega_n = nc/L \cdot (1 - 100)$. Q-Faktor: $Q \approx 1/(1 - K_{\text{frak}}) \approx 10^4/$.

4.2 Peratt in T0

Filaments as -induced currents: $\mathbf{J} = \sigma\mathbf{E} + \nabla \times \mathbf{B}$. Synchrotron:

$$= \frac{2}{3} r_e^2 \gamma^4 \beta^2 c (B_\perp + \partial_t B)^2. \tag{11}$$

Power Spektrum: Fractal hierarchy $C_\ell \propto \sum_n^n \sin(\ell\theta_n)$, with $\theta_n = \pi(1 - 100)^n$. BAO: $r_{\text{BAO}} \approx 150$ Mpc as -scaled filament Länge.

4.3 Unified T0 Gleichung

Combined Feld Gleichung:

$$\Box A_\mu + (\nabla^\nu F_{\nu\mu} + \mathcal{F}[A_\mu]) = J_\mu, \tag{12}$$

wo A_μ is the Vektor Potential (Peratt), $\mathcal{F}$ the fractal Operator (Unnikrishnan/T0). This generates CMB as -resonance in a static plasma Feld.

5 Schlussfolgerung

The mathematisch constructs of Unnikrishnan (gravitativ Lorentz Transformationen) and Peratt (Maxwell-synchrotron in filaments) are coherent but isolated. T0 brings them into harmony: as a bridge zwischen resonance and plasma Dynamik. The CMB Leistung Spektrum emerges as -harmony – präzise, without patches. Future simulations (e.g., FEniCS for -Felder) will test dies.

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