

CHESNOKOV PRECISION GRAVITODYNAMIC METROLOGICAL TESTBED

Dual-Rotor Resonant-Differential Apparatus with Wide Aperture (■500 mm) for Dynamic Gradients, Odd Nuclei Polarization, and Multiverse Axis of Evil Verification

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ABSTRACT: Metrological architecture of Chesnokov's gravitodynamic testbed for measuring spin-graviton forces, thruster calibration, and verification of the Multiverse +Z polar axis (Axis of Evil). Architecture bottom-to-top: granite base (1200 kg), ¹⁸¹Ta stator with ■500 mm aperture, **continuous grounded Faraday screen (quartz + 20 nm ITO) covering both stator body and aperture**, dual-disc rotor above with ■200 mm discs (150 mm edge clearance), trapezoidal servo arms for radius $L(t)$ and gap $h(t)$, detachable 45° inductor, and 23 h 56 min sidereal modulation tracking.

1. FUNDAMENTAL PHYSICS: SPIN-GRAVITON, +Z POLARITY, AND AXIS OF EVIL

1.1. Graviton Duality in SGDM: The graviton exhibits dual coupling: strong microgravity at nuclear scale ($G_{\text{strong}} \approx 10^{38} \cdot G_N$, core density $\rho_0 \approx 2.8 \cdot 10^{17} \text{ kg/m}^3$, force $F \sim 10^4\text{--}10^6 \text{ N}$) and weak Newtonian gravity ($G_N \approx 6.674 \cdot 10^{-11} \text{ m}^3/(\text{kg} \cdot \text{s}^2)$) due to outer phase shielding.

1.2. Odd Massive Tantalum-181 (¹⁸¹Ta) Nuclei: Unlike spin-zero even-even isotopes ($J=0$), ¹⁸¹Ta ($Z=73$, spin $J=7/2^+$, quadrupole moment $Q = +3.17 \text{ barn}$) possesses an unpaired nucleon enabling coherent macroscopic alignment of microgravity vectors under external phase pumping.

1.3. Multiverse +Z Polar Axis (Axis of Evil): The CMB dipole (627 km/s) and supermassive black hole coaxiality (IC 1101 ↔ Phoenix A) define a global +Z polar axis. Rotation of polarized nuclei relative to +Z produces dynamic graviton impulse.

2. ARCHITECTURE WITH WIDE APERTURE ■500 MM (BOTTOM-TO-TOP)

• **Granite Base and Stator with Aperture (Bottom):** 1200 kg granite table on pneumatic dampers (>85 dB isolation). Stationary ¹⁸¹Ta stator positioned at the bottom aligned with +Z with an open window ■500 mm, shielding outer fields and creating a clean central gravity window.

• **Dual-Disc Rotor (Top):** Two ¹⁸¹Ta discs (■200 mm, mass $m_t \approx 5.21 \text{ kg}$) on an aerostatic spindle rotating above the window. Side clearance to stator edges is $\Delta r = (500-200)/2 = 150 \text{ mm}$, exceeding vertical gap $h = 1\text{--}5 \text{ mm}$ by 30–150 times, eliminating edge attraction artifacts.

• **Trapezoidal Servo Arms:** Stepper servos dynamically adjust radius $L(t)$ (50–200 mm) and gap $h(t)$ (1.0–5.0 mm) without angular tilt.

3. CONTINUOUS FARADAY SCREEN (QUARTZ + ITO)

A stationary **continuous Faraday shield** (2.0 mm optical quartz with double-sided grounded 20 nm ITO coating, $R_{\text{sq}} \leq 15 \Omega/\text{sq}$) **fully covers both the stator body and the ■500 mm aperture**. The shield eliminates 100% of Coulomb forces and edge charges ($E_{\text{stat}} \equiv 0$) at the stator-window boundary while maintaining 99.9999% graviton transparency.

4. MINIMUM DETECTION, SOLAR ALIGNMENT, AND LUNAR TIDE SEPARATION

The apparatus measures the **pure absolute minimum value (dip delta)** relative to calibrated zero (0.000 V). Positive local attraction peaks are sliced off by a comparator (clipper U_{th}), while the VGA amplifier focuses on the ■500 mm window: $\Delta F_{\text{min}}(\theta) = |F_{\text{min}}(\theta) - F_{\text{zero}}|$.

• **Initial Solar Alignment (Ecliptic):** At solar noon the aperture is **aligned directly with the Sun** and locked for 24 hours. Earth rotation sweeps the setup from 0° (noon) to 180° (midnight), generating a **deep solar minimum delta (24.00 h period)**.

• **Lunar Gravitational Tide Separation:** Lunar gravity generates a tidal gradient with period $T_{\text{moon}} = 12 \text{ h } 25 \text{ min } 14 \text{ s}$ (M_2 constituent). Fourier spectral filtering mathematically separates the solar vector (24.00 h), lunar tide (12.42 h), and Multiverse relic background.

5. DIFFERENTIAL STATE MATRIX AND FACTOR DECOUPLING

Separation of gravity (mass) and quantum polarization (spin) factors is governed by Chesnokov's equations: $F_{\text{gravity}} = (F_I + F_{III}) / 2$ and $F_{\text{polarization}} = (F_I - F_{III}) / 2$.

Test Mode	Stator (Bottom)	Disc 1 / Disc 2	2ω Signal	ω Signal	Physical Response
I. In-Phase (+Z/+Z)	+Z ↑ (aligned)	+Z ↑ / +Z ↑	Max (+2F _{amp}), 0°	0 (rejected)	$F_I = F_{\text{grav}} + F_{\text{pol}}$ (Mass & spin sum)
II. Anti-Phase (+Z/-Z)	+Z ↑ (aligned)	+Z ↑ / -Z ↓	0 (canceled)	Max (+2F _{amp})	Spectral isolation of spin at frequency ω
III. Reversed (-Z/-Z)	+Z ↑ (aligned)	-Z ↓ / -Z ↓	Max (-2F _{amp}), 180°	0 (rejected)	$F_{III} = F_{\text{grav}} - F_{\text{pol}}$ (Mass & spin delta)
IV. Zero Check	+Z ↑ (aligned)	0 / 0 (unpumped)	0 (Noise ≤0.1 nN)	0 (Noise ≤0.1 nN)	Absolute zero baseline check confirming absence of mechanical noise

• **Timing:** Anti-phase measurement is strictly $\tau_{\text{meas}} \leq 10 \text{ s}$ (prior to repolarization $T_{\text{flip}} \approx 15\text{--}120 \text{ s}$) with detachable 45° inductor retracted prior to start. Decay tracking: $T_1 \approx 35\text{--}60 \text{ s}$ (+20°C).

6. CLAIMS FOR INTERNATIONAL PATENT REGISTRATION

1. Chesnokov Precision Gravitodynamic Metrological Testbed, comprising a base, stator, rotor, and sensors, *characterized in that* the stationary ¹⁸¹Ta stator is located at the bottom aligned with the Multiverse +Z polar axis with an open ■500 mm aperture, while the rotor is structured as a dual-disc dumbbell with ■200 mm ¹⁸¹Ta discs rotating above with side clearance $\Delta r = 150 \text{ mm}$.

2. Apparatus of claim 1, *characterized by* a continuous grounded optical quartz Faraday shield with 20–25 nm ITO coating covering both stator body and ■500 mm aperture, eliminating 100% of electrostatic edge charges.

3. Apparatus of claim 1, *characterized by* trapezoidal arm mechanisms for gap $h(t)$ and radius $L(t)$ adjustments.

4. Apparatus of claim 1, *characterized in that* the 45° initial pumping inductor is detachable and retracted prior to measurement.

5. Measurement Method according to claims 1–4, *characterized by* recording force dip signals over the ■500 mm aperture at 2ω and ω, detecting angular dip delta $\Delta F(\theta)$ and 23 h 56 min 04 s diurnal sidereal modulation.