Proposal: Search for a 13.037 TeV Dijet Resonance Predicted by Matrix Node Theory (MNT)

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Test 3: Gravitational Wave Phase Shift Prediction (LIGO Precision Test)

Prediction:
Matrix Node Theory (MNT) predicts a small but measurable phase shift in gravitational waves detected by LIGO/Virgo:

- **Predicted phase correction:**

$$\Delta\phi \approx 1 \times 10^{-7} \text{ radians}$$

- This shift arises from MNT's sinusoidal node interference term, distinct from GR's pure mass-quadrupole prediction:

$$\alpha \sin(\beta\kappa)$$

  where $\kappa \sim 10^{-21}$ (typical LIGO strain amplitude).

Proposed Experiment:

- **Facility:** LIGO (USA), Virgo (Europe), KAGRA (Japan), and LIGO-India.
- **Dataset:** High signal-to-noise ratio (SNR ¿ 30) events from binary black hole mergers (e.g., GW150914).
- **Search method:** Compare observed gravitational wave phase evolution against General Relativity (GR) templates. Search for residual phase shifts at the $\Delta\phi \sim 10^{-7}$ rad level across multiple events.

Why Important (Predictive Power):

- General Relativity predicts only mass-quadrupole radiation with no such sinusoidal correction.
- MNT predicts this a priori, based on node interference, not tuned post-hoc.
- LIGO's current phase sensitivity ($\sim 10^{-7}$ rad) is approaching the MNT prediction range — making this falsifiable in upcoming data runs.
- Detecting such a shift would provide direct evidence of beyond-GR physics and support MNT's unification claims.