DOCUMENT 47 – EXECUTIVE SUMMARY OF THE THEOREM OF ARITHMETIC STABILITY OF THE UNIVERSE (EN_46)

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Fundamental constant: `ñ` (discovered and named by the author)
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1. Purpose of document EN_46

Document **EN_46** presents the complete and rigorous proof that:

1. The differential geometry of the universe is defined by the factorised Lorentz–Einstein metric:

$$ds^2 = dt^2 - dt'^2$$

2. The stability of matter (confined wave) requires that the number of cycles `n` be an integer.

3. The Bernstein eigenvalues in Schwarzschild space, `β_n`, are related to the stability radii `R_n` through the universal constant `ñ`:

$$ñ = R_n \cdot \beta_n$$

4. The transfer function of the universe, obtained by the Laplace transform, has its zeros at:

$$s = \beta_n = \frac{2\pi ñ}{n\lambda_C}$$

5. All these zeros lie on the critical line (\text{Re}(s) = 1/2), thus proving the **Riemann hypothesis** as a theorem derived from the geometry of the universe.

6. Reality is arithmetic, and arithmetic is Riemannian.

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2. Fundamental results

Concept	Mathematical expression	Physical meaning
Universal metric	(ds^2 = dt^2 - dt'^2)	Total differential geometry of spacetime
Stability radius	(R_n = \dfrac{n \lambda_C}{2\pi})	Wave confinement for integer `n`

Concept	Mathematical expression	Physical meaning
Coupling constant	$ñ = R_n \cdot \beta_n$	Link between the two geometric projections
Bernstein eigenvalues	$\beta_n = \dfrac{2\pi ñ}{n \lambda_C}$	Discrete spectrum of the black hole
Wave equation	$\Psi'' + \dfrac{1}{r}\Psi' + \left(\dfrac{ñ^2}{r^2} - \dfrac{1}{R_n^2} \right) \Psi = 0$	Stationary confined modes
Laplace zeros	$s = \dfrac{2\pi ñ}{n \lambda_C}$	Vanishing of the transfer function
Riemann critical line	$\text{Re}(s) = \dfrac{1}{2}$	Proof of the Riemann hypothesis

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3. Theorem 5 (summary version)

> **Theorem on zeros and arithmetic stability:**
> The transfer function of the universe has its zeros exactly at:
>
> $$s = \frac{2\pi ñ}{n\lambda_C}, \quad n \in \mathbb{N}$$

> These zeros coincide with the Bernstein eigenvalues and are in bijection with the integers `n` that give stability to matter.
> All of them lie on the line (\text{Re}(s) = 1/2), thus proving the Riemann hypothesis.

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4. Implications for physics and mathematics

Field	Implication
Differential geometry	The metric (ds^2 = dt^2 - dt'^2) is the fundamental structure of the universe.
Quantum mechanics	The stability of matter is deterministic and arithmetic, not probabilistic.
Relativity	The Lorentz–Einstein factorisation unifies space and time in a light-cone geometry.
Gravity	The Bernstein eigenvalues connect visible matter with black holes.
Number theory	The Riemann hypothesis is proved as a consequence of the geometry of the universe.
Cosmology	Reality is a holographic projection of arithmetic zeros.

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5. Executive conclusion

The universe is a self-regulating system whose differential geometry is:

$$ds^2 = dt^2 - dt'^2$$

The stability of matter requires that waves close their phase in an integer number of cycles (`n`). This generates a spectrum of zeros in the transfer function of the universe that coincides with the Bernstein eigenvalues and with the Riemann critical line.

The Riemann hypothesis is true because the universe demands it.
Reality is arithmetic.

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6. On the constant `ñ`

The constant `ñ` (discovered and named by Víctor Estrada Díaz) is the universal factor that relates the stability radii of matter to the eigenvalues of the black hole:

$$\tilde{n} = R_n \cdot \beta_n$$

Its existence and value are determined by the differential geometry of the universe, with no free parameters or empirical adjustments.

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7. Reference to the full document

This executive summary corresponds to **Document 46 – Revision 2 of the Theorem of Arithmetic Stability of the Universe**, where the complete, step-by-step demonstration can be found, including:

- Derivation of the metric
- Stability condition
- Definition and properties of `ñ`
- Bernstein eigenvalues
- Differential wave equation
- Laplace-transform proof
- Connection with the Riemann hypothesis
- Author's reflections

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8. Note for censors and reviewers

This executive summary (EN_47) synthesises the results of the full document (EN_46) in order to facilitate a quick, structured first evaluation.

However, for a thorough review and verification of the proofs, the reader is referred to document EN_46, where all equations, boundary conditions and logical steps are developed in a self-contained manner.

This summary does not replace the full document, but serves as a navigation guide to the essential aspects of the theorem.

End of executive summary (EN_47)
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