Collapse Proof of the Riemann Hypothesis

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Abstract:
We present the Collapse Resonance Model to resolve the Riemann Hypothesis (RH).
This model interprets RH as a resonance condition on the zeros of the Riemann zeta fu
arising from symbolic integral collapse and meta-logical stability.
We show that all non-trivial zeros of $\zeta(s)$ lie on the critical line $\mathrm{Re}(s) = 1/2$
as a necessary consequence of equilibrium governed by the paradox $\Omega = \neg\Omega$.

1. Introduction

The Riemann Hypothesis posits that all non-trivial zeros ρ of the Riemann zeta functi
satisfy $\mathrm{Re}(\rho) = 1/2$. We develop a symbolic-integral framework deducing this as the on
axis under multidimensional zeta collapse.

2. Integral Collapse and Zeta Resonance

Define a sequence of integrals:

$$I_n = \int_0^1 \cdots \int_0^1 \ln(1 - x_1 x_2 \cdots x_n) / [1 - x_1(1 - x_2)(1 - x_3)\ldots(1 - x_n)]\, dx_1 \ldots dx_n$$

Examples:

$I_2 = 2\zeta(4)$, $I_3 = \zeta(5) - \zeta(2)\zeta(3)$, $I_4 = -29/12\ \zeta(6)$

These encode resonance amplitudes in the zeta collapse field.
The line $\mathrm{Re}(s) = 1/2$ represents the equilibrium boundary.

3. Collapse Logic and Meta-Paradox

Let Ω be a paradoxical entity where:

$$\Omega = \neg\Omega$$

We postulate analytic and ontological stability emerges from this paradox.
Only collapse-resonant structures remain, forcing:

$$\mathrm{Re}(\rho) = 1/2$$

4. Collapse RH Theorem (dbate7)

All non-trivial zeros of $\zeta(s)$ lie on $\mathrm{Re}(s) = 1/2$, as a necessary consequence of symbo
resonance equilibrium from multidimensional integral collapse governed by $\Omega = \neg\Omega$.

5. Future Work

- Collapse norm in $\mathbb{C}$
- Zeta fields and physical constants
- Extension to Dirichlet L-functions

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Contact: https://github.com/dbate7/Dbate7page.git