Email Details:
From: **Attila Csordas** <attila@agecurve.xyz>
Date: Friday, January 10, 2025 at 10:22 AM
Subject: Re: Annals of Math: Submission - Csordas
To: Annals <annals@math.princeton.edu>

Response to Annals of Mathematics Review

Dear Professor Szabó, Dear Reviewer and Editorial Board of Annals of Mathematics,

Cc-d here the mathematicians already been informed of this manuscript, Professor Janos Kollar (whose help was crucial to avoid compactification issues), Professor Bela Bollobas, Professor Jeffrey Stopple, Professor Timothy Gowers, Professor Imre Leader, Professor Laszlo Lovasz. Additionally, I'm cc-ing Professor Terence Tao, Professor James Maynard, Professor Larry Guth, Professor Barry Mazur and Professor Ian Stewart.

Attachments:

- manuscript: `manuscript_RH_via_Zeropole_Balance_Attila_Csordas_01042025_resubmission.pdf`
- response to the sole reviewer: `response_to_reviewer.pdf`
- Davenport-Heilbronn paper: `Davenport_Heilbronn_1936.pdf`

Thank you for taking the time to review our manuscript on the Riemann Hypothesis proof. I am writing to address what appears to be a fundamental misunderstanding regarding the methodology of our proof.

The review suggests that our proof "uses only the functional equation of zeta and the Hadamard product" and cites the Davenport-Heilbronn paper (1936) as a counterexample. However, this characterization overlooks the core mathematical machinery of our approach. Our proof employs several crucial elements beyond functional equations and Hadamard products:

1. A rigorous zeropole perpendicularity framework
2. The full Riemann-Roch machinery on compactified surfaces
3. Minimality arguments through divisor theory
4. A novel shadow function construction enabling proper compactification

The Davenport-Heilbronn paper, while significant in its own right, deals with Hurwitz zeta functions and their linear combinations. These functions fundamentally lack the specific geometric and algebraic properties our proof exploits. Specifically, they do not possess the critical zeropole structure that enables our minimality argument through the Riemann-Roch framework.

We have prepared a detailed technical document explaining these distinctions, which I am attaching to this email, called `response_to_reviewer.pdf`. The document demonstrates why the counterexamples in Davenport-Heilbronn do not apply to our methodology, as our approach employs substantial additional structure that provides constraints not present in their framework.

We would welcome the opportunity to discuss these technical aspects in more detail, perhaps with additional reviewers who specialize in algebraic geometry and complex analysis on Riemann surfaces. In my experience across different fields of mathematics and science, including my own background in translational geroscience and computational biology, multiple independent reviews often provide valuable diverse perspectives, particularly for work that bridges different mathematical approaches. This is especially relevant for our proof, which combines analytical, geometric, and algebraic methods.

For transparency, the peer review and response will be added to the GitHub repository I'm maintaining related to the proof: `https://github.com/attila-ac/Proof_RH_via_Zeropole_Balance/`

Thank you for your consideration.

Best regards,
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