1. Conditions to be satisfied for Proof of Zeta function

• We can show that the new method is **not** applicable to Hurwitz zeta function and related zeta functions and **does not** contradict the existence of their non-trivial zeros away from the critical line with real part of $s = \frac{1}{2}$. (Section 3 for more details)

• The proof of Riemann Hypothesis presented in this paper relates to $E_p(t) = E_0(t)e^{-\sigma t}$ in the region $0 < |\sigma| < \frac{1}{2}$, and requires it to be a real **analytic** function where $E_0(t) = E_0(-t)$ has **even symmetry**.

• Both $E_p(t)$ and $E_{p\omega}(\omega)$ should be **Fourier transformable**.

• This proof requires **convergence of integrals** in several equations and hence uses specific properties of $E_0(t) = 2\sum_{n=1}^{\infty}[2\pi^2 n^4 e^{4t} - 3\pi n^2 e^{2t}]e^{-\pi n^2 e^{2t}} e^{\frac{t}{2}}$ such as $E_0(t) \geq 0$ for all $|t| \leq \infty$ and $E_p(t), g(t)$ are real L^1 **integrable** functions and go to zero as $t \to \pm\infty$. (Section 2.1 for more details)

• $E_p(t)$ and $g(t)$, along with their $(2r)^{th}$ derivatives, go to zero as $t \to -\infty$ with its order of decay greater than $e^{\frac{3t}{2}}$ and $g(t)$ goes to zero as $t \to \infty$ with its **order of decay** greater than $e^{\frac{-5t}{2}}$, for $0 < \sigma < \frac{1}{2}$. This holds as $r = 0, 1, ...\infty$. (Appendix K for more details)

• These conditions may **not** be satisfied for many other functions and hence the new method may **not** be applicable to such functions.

• If there exists a function which has a **known zero** in its Fourier Transform, and it **satisfies** above mentioned properties, **please let me know**!