Mathematics > Classical Analysis and ODEs

Integral and series transformations via Ramanujan's identities and Salem's type equivalences to the Riemann hypothesis

Semyon Yakubovich

(Submitted on 6 Jun 2012)

We consider integral and series transformations, which are associated with Ramanujan's identities, involving various arithmetic functions and a ratio of products of Riemann's zeta functions of different arguments. Reciprocal inversion formulas are proved in a Banach space of functions whose Mellin's transforms are integrable over the vertical line Re s > 1. Examples of new transformations like Widder-Lambert and Kontorovich-Lebedev type are exhibited. Particular cases include familiar Lambert and M•obius transformations. Finally a class of equivalences of the Salem type to the Riemann hypothesis is established.

Subjects: **Classical Analysis and ODEs (math.CA)**
Cite as: **arXiv:1206.1166 [math.CA]**
(or **arXiv:1206.1166v1 [math.CA]** for this version)

Submission history

From: Semyon Yakubovich [view email]
[v1] Wed, 6 Jun 2012 10:04:22 GMT (12kb)

Which authors of this paper are endorsers?