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**J. Brian Conrey\*** ([conrey@aimath.org](mailto:conrey@aimath.org)), AIM, 360 Portage Ave, Palo Alto, CA 94306. *A cotangent sum*. Preliminary report.

We prove a reciprocity formula for a cotangent sum that arises in the Beurling-Nyman criterion for the Riemann Hypothesis. It is connected with the Lewis-Zagier theory of period functions of Maass forms. (Received August 14, 2010)