1023-11-1595   **Jennifer Beineke*** (`jbeineke@wnec.edu`), Department of Mathematics, Western New England College, 1215 Wilbraham Road, Springfield, CT 01119, and **Daniel Bump**. *Atkinson's formula for the mean square of the Riemann zeta function.* Preliminary report.

In 1949, Atkinson determined an explicit formula for $E(T) = \int_0^T \left| \zeta \left(\frac{1}{2} + it \right) \right|^2 dt - T \log \left(\frac{T}{2\pi} \right) - (2\gamma - 1)T$. We will investigate a modified version of this formula due to Jutila, and we will discuss how another generalization may be obtained for other values of $\zeta(s)$. The result will require a smooth version of the Oppenheim summation formula. (Received September 26, 2006)