

## On the logarithm of the Riemann zeta function and its iterated integrals

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**Abstract.** The present paper gives some results for the logarithm of the Riemann zeta function and its iterated integrals. We obtain a certain explicit approximation formula for these functions. The formula has some applications, which are related to the value distribution of these functions and a relation between prime numbers and the distribution of zeros in short intervals.

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