

The joint universal property for derivatives of the Riemann zeta function

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In 1980's, B. Bagchi, S. M. Gonek and S. M. Voronin independently proved that the joint universality theorem for a set of Dirichlet L -functions with inequivalent characters. For the Riemann zeta function $\zeta(s)$, it is easily obtained that the joint universality does not hold for a pair of $\zeta(s)$ and its derivative $\zeta'(s)$. In the conference, I will report that if we choose a suitable integer $k \geq 0$, the joint universality holds for a pair of $\zeta(s)$ and its k -th derivative $\zeta^{(k)}(s)$.