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Phase structure of five-dimensional black di-ring

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We investigate the phase structure of black di-ring in five-dimensional asymptotically flat vacuum gravity. We numerically plot the points of black di-rings in the phase diagram to study the region covered by black di-ring. The distribution of black di-ring shows that the area of black di-ring is always less than the maximum value of black ring. The plot indicates that there are black di-ring configurations whose area parameters are arbitrarily close to zero. In addition we analyze the zero area black di-ring solution constructed from S^2 rotating black ring.