超大质量双黑洞系统的演化

Part A. 动力学摩擦

A.1 (0.75 pt)

$k =$

A.2 (0.25 pt)

$\Delta p_x =$

A.3 (0.4 pt)

$F_{DF} =$

A.4 (0.2 pt)

$\log \Lambda =$

Part B. 引力弹弓

B.1 (0.25 pt)

$v_{bin} =$

$E =$

B.2 (0.5 pt)

$b =$

B.3 (1.0 pt)

$\Delta t =$

B.4 (0.25 pt)

$$\frac{dE}{dt} =$$

$$\left(\frac{da}{dt}\right)_{SS} =$$

B.5 (1.0 pt)
(公式)
$$T_{SS} =$$

(值)
$$T_{SS} =$$

Part C. 引力波辐射

C.1 (0.2 pt)

$$\left(\frac{da}{dt}\right)_{GW} =$$

C.2 (0.7 pt)

$$T_{GW} =$$

C.3 (0.1 pt)

$$a_H =$$

Part D. 整个演化的过程

D.1 (0.25 pt)

$$v =$$

D.2 (0.75 pt)

$$\left(\frac{da}{dt}\right)_{DF} =$$

D.3 (0.3 pt)
(公式)
$a_1 =$

(值)
$a_1 =$

D.4 (0.75 pt)

$T_1 =$

D.5 (0.3 pt)
(公式)
$a_2 =$

(值)
$a_2 =$

D.6 (1.75 pt)

$T_2 =$

$T_3 =$

D.7 (0.3 pt)

$T_{ev} =$