

Theory



A15-1

English (Official)

Cosmic Strings (55 points).

Part A: Gravitational Field of a Cosmic String (22 points).

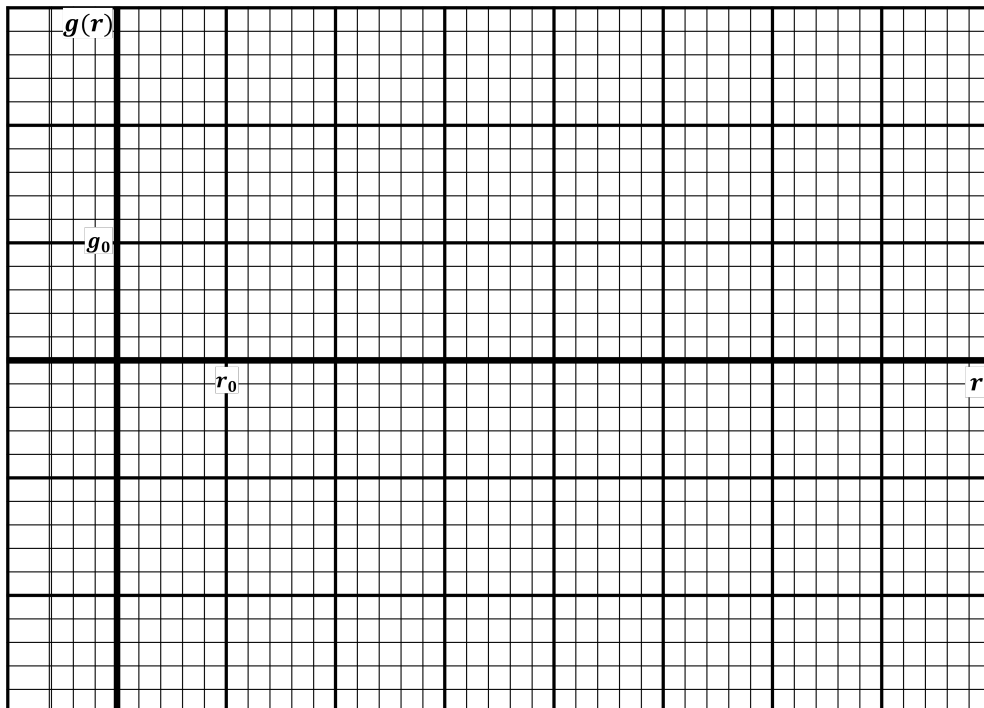
A.1 (6.0 pt)

$$\begin{aligned} r < r_0 \\ \bullet \quad \vec{g}(r) = \\ r > r_0 \\ \bullet \quad \vec{g}(r) = \end{aligned}$$

A.2 (1.0 pt)

$$g_0 =$$

A.3 (3.0 pt)



A.4 (4.0 pt)

$$A(G, \mu) =$$

$$\alpha(G, \mu) =$$

Theory



A15-2

English (Official)

A.5 (3.0 pt)

A.6 (4.0 pt)

$$R_{max} =$$

A.7 (1.0 pt)

Part B: Cosmic string as a photon gas (17 points).

B.1 (2.0 pt)

B.2 (4.0 pt)

B.3 (2.0 pt)

B.4 (5.0 pt)

B.5 (3.0 pt)

B.6 (1.0 pt)

C.1 (6.0 pt)

C.2 (6.0 pt)

C.3 (4.0 pt)