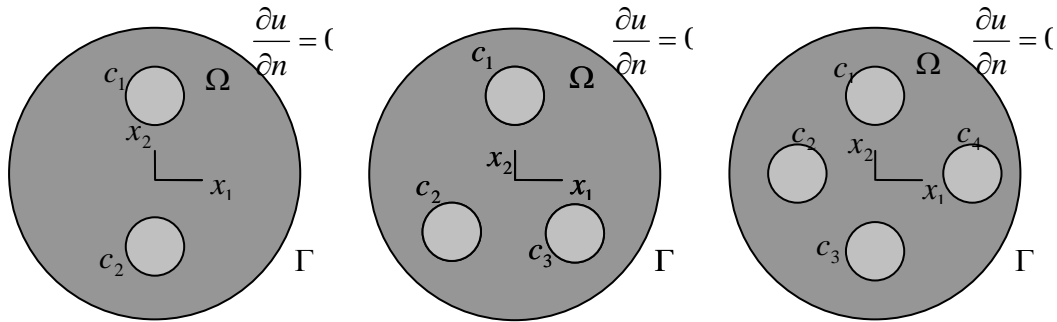


Beprog 113 Torsion problems with circular inclusions

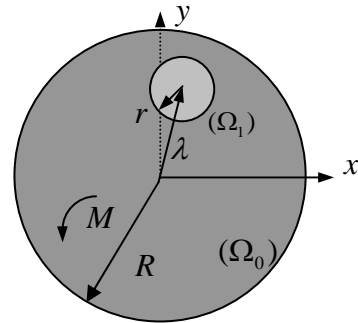


Governing equation : $\nabla^2 u(x) = 0, x \in \Omega$

$$\frac{\partial u}{\partial n} = -\frac{1}{2} \frac{d}{ds} (r^2), x \in \Gamma$$

Interface condition :

$$\left\{ \begin{array}{l} \text{Continuity condition} \\ \text{Equilibrium condition} \end{array} \right. \quad x \in c_1 + c_2 + \dots + c_N$$



湯任基 Table 1 Torsional rigidity of compound cylinder ($r/R = 0.3, \lambda/R = 0.6$)

μ_1 / μ_0	0	0.2	0.6	1.0	5.0	20.0
D^*	0.82377	0.89181	0.96246	1.0000	1.10794	1.25181

Where $D^* = D/D_0$ ($D_0 = \pi / \mu_0 R^4 / 2$)

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$$D = \mu_2 I + (\mu_1 - \mu_2) I' - \frac{\pi l^2 r_1^2 (\mu_1 - \mu_2)^2}{\mu_1 + \mu_2} - 2\mu_2 \pi l^2 \nu \rho_1^2 \sum_{k=1}^{\infty} \frac{\alpha^k \nu^k}{(1 - a^2 p_1^2 \alpha^k)^{2r}}$$

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