

邊界元素法1998 第九次作業

1. Extend the two-dimensional case in the course to three-dimensional case for the bump integral in U kernel integration.

Determine the following integral:

$$\int_{B_\epsilon} U(s, x) dB(s)$$

where

$$U(s, x) = \frac{1}{r}$$

2. Extend the two-dimensional case in the course to three-dimensional case for the bump integral in T kernel integration.

Determine the following integral:

$$\int_{B_\epsilon} T(s, x) dB(s)$$

where

$$T(s, x) = \frac{\partial U(s, x)}{\partial n_s}$$

3. Extend the two-dimensional case in the course to three-dimensional case for the bump integral in L kernel integration.

Determine the following integral:

$$\int_{B_\epsilon} L(s, x) dB(s)$$

where

$$L(s, x) = \frac{\partial U(s, x)}{\partial n_x}$$

4. Extend the two-dimensional case in the course to three-dimensional case for the bump integral in M kernel integration.

Determine the following integral:

$$\int_{B_\epsilon} M(s, x) dB(s)$$

where

$$M(s, x) = \frac{\partial^2 U(s, x)}{\partial n_s \partial n_s}$$