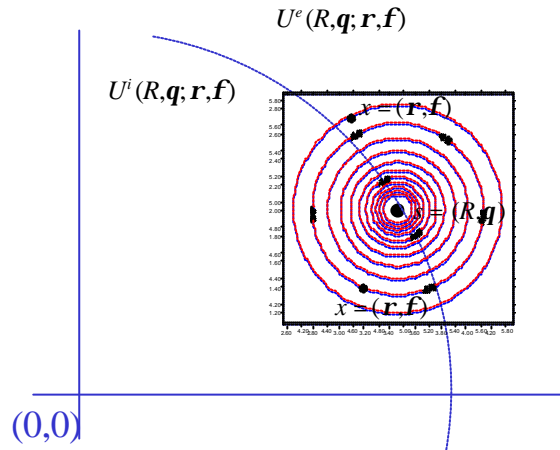


## 程式 62 Degenerate kernels

1. Please plot the kernel function  $J_0(kr)$  in terms of degenerate kernel as shown below.

$$U(s, x) = \begin{cases} \sum_{n=-\infty}^{\infty} U^i(R, \mathbf{q}; \mathbf{r}, \mathbf{f}) = \sum_{n=-\infty}^{\infty} J_n(kR)J_n(kr)(\cos(m(\mathbf{q} - \mathbf{f}))), & R > r \\ \sum_{n=-\infty}^{\infty} U^e(R, \mathbf{q}; \mathbf{r}, \mathbf{f}) = \sum_{n=-\infty}^{\infty} J_n(kr)J_n(kR)(\cos(m(\mathbf{q} - \mathbf{f}))), & R < r \end{cases}$$



Polar coordinate  $x = (\mathbf{r}, \mathbf{f})$  and  $s = (R, \mathbf{q})$ .

### References:

- 【1】J. T. Chen and Y. P. Chiu, 2002, On the pseudo-differential operators in the dual boundary integral equations using degenerate kernels and circulants, Engineering Analysis with Boundary Elements, Vol. 26, No.1, pp.41-53 (SCI and EI)