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# Spherical enclosed charge 2

*R*2 < *r*

0 < *r* < *R*1

*R*1 < *r* < *R*2

*q*enc = 0

*q*enc < *Q*

*q*enc = *Q*

# Interpolation [0,1]

*x*

1

0

*B*

*A*

*y*

# Interpolation [*x*1, *x*2]

*x*

*x*2

*x*1

*y*1

*y2*

*y*

# E due λ with some fors

*h*

*λ*, *L*



*o*

*x*

*y*

*s*

*x* = –*s*

*x* = –*s* + *L*

*x* = 0

*h*

*λ*, *L*



*o*

*x*

*y*

*s*

*x* = *x*left

*x* = *x*left + *L*

*x* = *x*left + *s*

(a)

(b)

(c)

(d)

*h*

*λ*, *L*



*o*

*x*

*y*

*L*1

*x* = –*L*1

*x* = *L2*

*x* = 0

*L*2

*θ*1

*θ*2

*h*

*λ*, *L*



*o*

*x*

*y*

*αL*

*x* = –*αL*

*x* = *βL*

*x* = 0

*βL*

*α* + *β* = 1

# Enc charges Gauss’s surfaces

*q*1 = +Q

*q*2 = –2Q

*q*3 = +2Q

*q*4 = –Q

*q*5 = 0

*s*1

*s*2

*s*3

*s*4

# Cell cs and bcc

SC

BCC

# Interpolation data set

*x*2

*x*1

*y*1

*y2*

*x*

*x*3

*y3*

*y*

*xN*

*xN*-1

*yN*-1

*yN*

# Polynomial interpolation

# Interpolation data set

*x*2

*x*1

*y*1

*y2*

*x*

*x*3

*y3*

*y*

*xN*

*xN*-1

*yN*-1

*yN*

# Interpolation data set

*x*2

*x*1

*y*1

*y2*

*x*

*x*3

*y3*

*y*

*xN*

*xN*-1

*yN*-1

*yN*

*x*2

*x*1

*y*1

*y2*

*x*

*x*3

*y3*

*y*

*xN*

*xN*-1

*yN*-1

*yN*

# Electric potential chart

0

*E*

*r*

0

0

*E*

*r*

0

0

*V*

*r*

0

*r* = *R*

*V*1

0

*V*

*r*

0

*r* = 2*R*

0

*V*

*r*

0

*r* = 3*R*

*V*3

0

*V*

*r*

0

*r* = 2*R*

*V*2

# E solid conductor sphere

0

*E*

*r*

0

*R*

*E*(*R*)

0

*V*

*r*

0

*R*

*V*(*R*)

0

*E*

*r*

0

*L*



0

*V*

*r*

0

*L*

*VL*



0

*E*

*r*

0

*H*

0

*V*

*r*

0

*H*

# E solid isolator sphere

0

*E*

*r*

0

*R*

*E*(*R*)



0

*E*

*r*

0

*H*



0

*E*

*r*

0

*H*

0

*V*

*r*

0

*H*

0

*V*

*r*

0

*R*

*V*(*R*)

*V*(0)

0

*V*

*r*

0

*H*

*V*(*H*)

*V*(0)

# E line charge density

*h*

*λ*, *L*

*o*

*x*

*y*

*x* = –*a*

*x* = *b*

*x* = 0

*θ*1

*θ*2

*dq*



*h*

*λ*, *L*

*o*

*x*

*y*

*x* = –*L*/2

*x* = *L*/2

*x* = 0



*h*

*λ*, *L*

*o*

*x*

*y*

*x* = –*L*

*x* = 0



# Notes and version

* 130% (Jekyll + MathJax), save as 0000x first then save as back to 0000, remove 0000x then, x = i
* 20210209