Amount of Z-overlap for the modules radially separated

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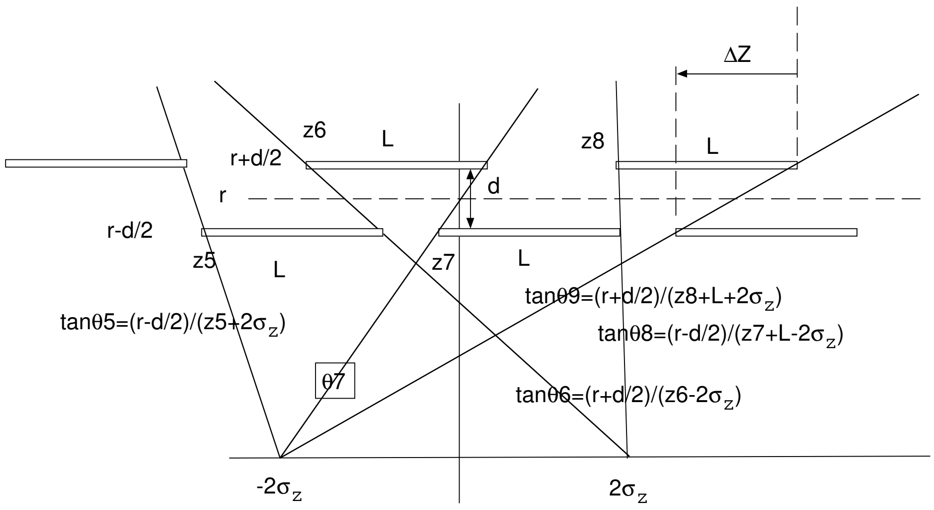
Required overlap in Z direction of the modules which are radially separated is calculated for the requirement that all the particles emerging from the vertex points offset by 2 standard deviation from the origin are covered. For a radial separation of 4 mm, the maximum overlap displacement is nearly 10 mm at a radius of 300 mm for the set of 12 modules.

y=tanθ*(x-x0)+y0
x=(y-y0)/tanθ+x0



z5=2σz+(r-d/2)/tanθ6-L
z6=-2σz+(r+d/2)/tanθ7-L

z7=-2σz+(r-d/2)/tanθ7
z8=+2σz+(r+d/2)/tanθ8