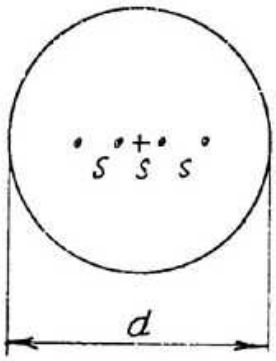
I. THIN, CIRCULAR SLICE.

I.1) Measurement in the Center.



thickness $t < \frac{s}{2}$

This case has been treated by Smits (e). The result is:

$$\varrho = G \frac{V}{I}, \quad G = \frac{\pi}{\ln 2} \cdot t \cdot C_o(\frac{d}{s}) = 4{,}5324 \cdot t \cdot C_o(\frac{d}{s}) \qquad (18)$$

where:

$\frac{\pi}{\ln 2} \cdot t = 4{,}5324 \cdot t$ is the geometric factor for an infinitely large, thin slice (section D.2)

$$C_o(\frac{d}{s}) = \frac{1}{1 + \frac{1}{\ln 2} \ln\left[\frac{1 + 3(\frac{s}{d})^2}{1 - 3(\frac{s}{d})^2}\right]} \qquad (19)$$

is the additional correction for a finite diameter $C_o \rightarrow 1$ as $d/s \rightarrow \infty$.

The magnitude $\frac{\pi}{\ln 2} \cdot C_o = 4{,}5324 \cdot C_o$ has been tabulated by Smits (e) and later more extensively by Swartzendruber (h). $C_o(\frac{d}{s})$ is shown at page 39 and $\frac{\pi}{\ln 2} \cdot C_o(\frac{d}{s})$ at page 40.