A.3) Symmetry Considerations.

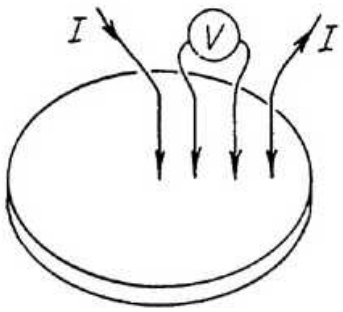
If the sample has a symmetry plane through the four points of measurement , the electric field in the sample will be symmetrical with respect to this plane, and no current will pass the plane. Consequently, we can remove one half of the sample without affecting the electric field in the other half part. If the sample contains more symmetry planes through the four points, any part between two such planes can be removed without effecting the electric field in the remaining part.

This can be utilized in deriving geometric factors for configurations with similar symmetry.

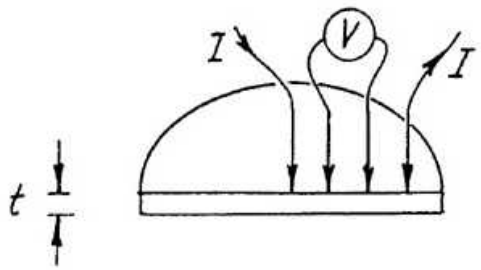
As an example from the way of reasoning we consider a circular slice with the probes on a diameter. The resistivity is given by:

$$\rho = G \frac{V}{I}$$

a)



b)



If we bisect the slice as shown, twice the voltage will develop between the inner probes for the same current.

So,

$$\rho = \frac{G}{2} \cdot \frac{V}{I}$$