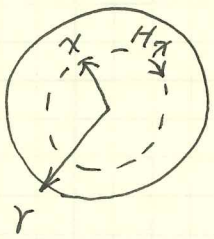
Additional Notes

1. Internal Flux Linkage:



For accuracy, internal flux linkage can be added to compute inductance. In which case, the radius is modified as

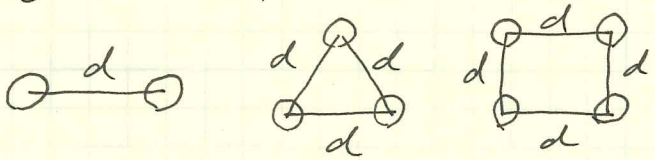
$$r' = e^{-1/4} r = 0.7788\, r$$

For stranded conductors (ACSR), r' is replaced by GMR (geometric mean radius)

See A.4 Table

2. Bundle Conductor:

It is common practice for EHV lines to use more than one conductor per phase, called bundling. Bundling reduces the electric field strength at the conductor surfaces, which in turn reduces or eliminate corona and its results: undesirable power loss, communications interference, and audible noie. It also reduces the series reactance of the line by increasing the GMR of the bundle.



$D_{SL} = \sqrt{D_s d}$ $\quad \sqrt[3]{D_s d^2}$ $\quad 1.091 \sqrt[4]{D_s d^3}$

Inductance : $L_a = 2 \times 10^{-7} \ln \frac{D_{eq}}{D_{SL}}$ H/m

Capacitance : $\frac{2\pi\varepsilon}{\ln(D_{eq}/D_{sc})}$