

Correction to Scientific Report #40

THE USE OF EFFECTIVE APERTURE RELATIONS FOR THE  
CALCULATION OF THE INPUT CONDUCTANCE OF ELECTRICALLY  
SMALL ANTENNA

by

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In Section IV, the result of the integration using (9) for  $I_R(\theta; z)$  in (5) leading to (10) for  $G_A$  has been incorrectly stated. The correct result for the input conductance of an electrically short ( $kh \leq 1$ ) cylindrical antenna is given by

$$G_A = \eta \frac{k^2}{6\pi} |I^R(\pi/2, z)|^2 \quad (11)$$

Numerically, the above formula differs from the original eq. (10) by  $\sim -17\%$ . A corrected Figure 3 is included which shows (11) to predict conductance values very close to the numerically integrated results using (5) with (8). Hence the simple expression above does not agree as well as the original incorrect eq. (10) with the conductance data of King [1, Chap. II, Sec. 32] for the smaller values of  $kh$  but substantially better agreement is obtained at the larger values of  $kh$ .

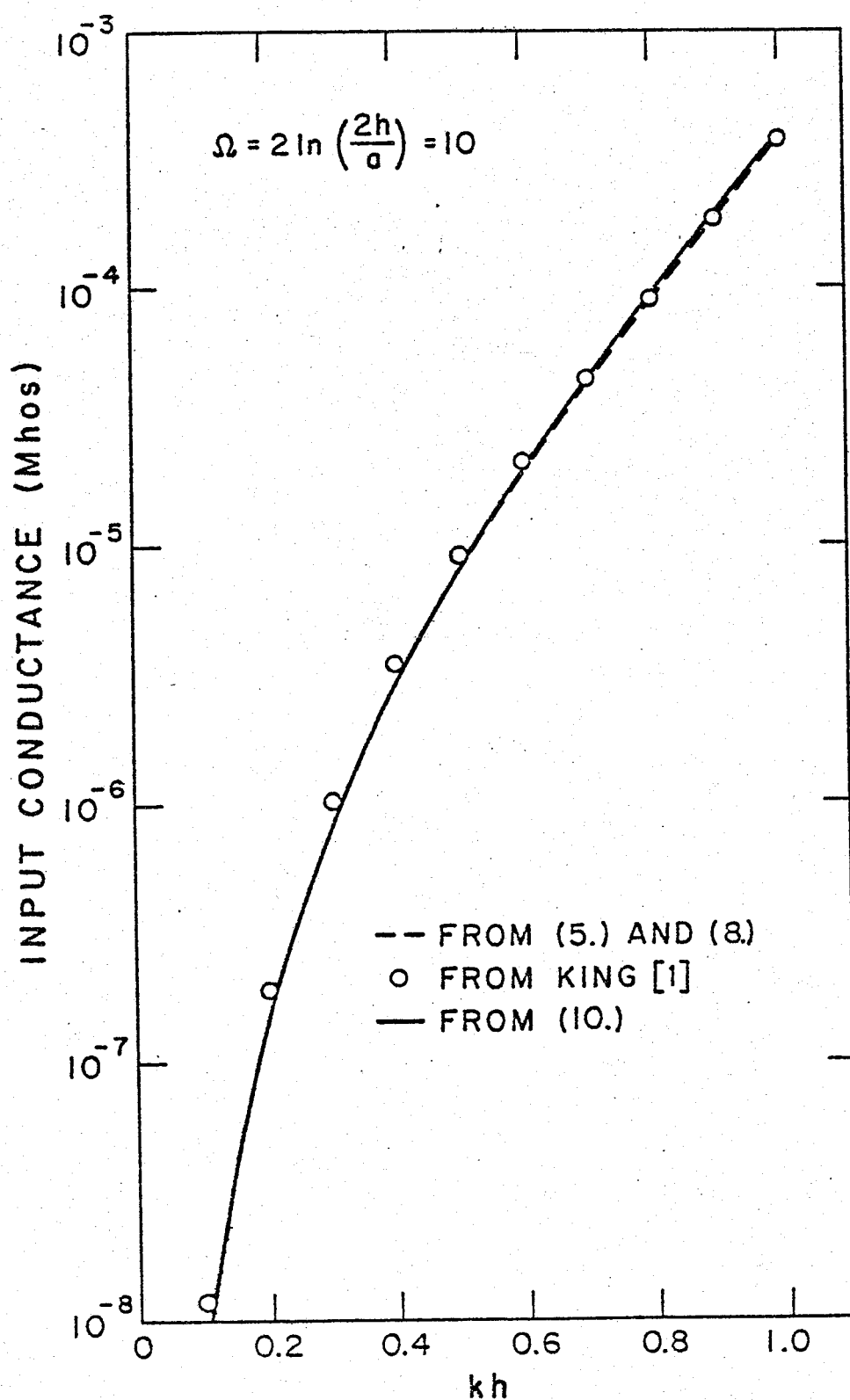


Figure 3. The input conductance of a short cylindrical antenna in which  $\Omega = 2 \ln(2h/a) = 10.0$ .