

for a simple case; in general, for conductance and susceptance we should write apparent conductance and apparent susceptance. Admittance, conductance and susceptance are thus used as the inverse correspondents of impedance, resistance and reactance, and may be added as vector quantities. Many alternating current problems are much simplified by this treatment. It is important, however, to employ components which are at right angles to each other, and for this reason the definition of the AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS seems preferable. It is in this point that the definition is fundamentally different from that of the French writer already referred to. In the absence of hysteresis losses, the definitions would be the same, applying the term equivalent reactance to the case where counter E. M. F.'s other than those due to capacity and self-induction, are present. To conclude, then, we may say that in the absence of iron we may define reactance in terms of inductance and capacity, as this writer has done, and as has been done by us in the illustrative examples in our paper; the fundamental definition, however, should, in our opinion, remain in the general form adopted by the AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.

In a note to our original paper, we have called attention to the first suggestion of the term reactance by M. Hospitalier in May, 1893, and the recommendation of the committee appointed by the Société Internationale des Electriciens to consider the programme for the Chicago Congress, 1893. The term is a happy one; it is international, and uniformity in its use is to be desired.

In our opinion the best definition for "reactance" is that adopted by the AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS. In this, as in all matters, there is however room for difference of opinion. The reasons for thus defining the term have not before been published, but we believe that when they are duly considered, the action of the INSTITUTE will meet with international approval.

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[COMMUNICATED BY PROF. H. J. RYAN, NOVEMBER 21ST, 1894.]

I like the definition of "reactance" as put forth by the authors of this paper. Had we learned to use alternate currents first, this relation between the constant properties of a circuit, the current and E. M. F. would first have been understood instead of Ohm's law:

$$\text{Impedance} = \frac{E}{I}.$$

Experience would next have taught us that this impedance relation is made up of two fundamental component relations: the one is a power relation, and the other, a wattless relation. Be-

cause of our early familiarity with direct currents we learned long ago to write the power relation as:

$$\text{Resistance} = \frac{\text{power } E}{I},$$

and, now, if we accept this definition of "reactance" the second and equally important component of the impedance law will take the same simple form

$$\text{Reactance} = \frac{\text{reactance } E}{I}.$$

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