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STUDY GROUP V

After examination of draft Report G.l.v(V) the Editorial Group of Study Group V submits the following text to the Plenary Assembly for approval.

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DRAFT

REPORT ...

THE COMPUTATION OF GROUND-WAVE PROPAGATION CURVES

(Recommendation ...(G.l.b(V)))  
(Report ...(G.l.k(V)))

(1970)

The text of this Report will be found on pages 221-222 of the Conclusions of the Interim Meeting of Study Group V, Boulder, 1968, which are annexed to this document.

No modifications to the text have been proposed.

DRAFT

REPORT . . . .

THE COMPUTATION OF GROUND-WAVE PROPAGATION CURVES

(Recommendation...(G.1.b(V))

(Report...(G.1.k(V))

(1970)

Report...(G.1.k(V)) discusses the problem of ground-wave propagation curves with special reference to the effect of the troposphere on frequencies below 10 MHz. It is pointed out that there is a discontinuity in this respect between the C.C.I.R. Atlases of curves for frequencies above 30 MHz and those of Recommendation...(G.1.b(V)) in which no account is taken of the troposphere or of height-gain effects. Moreover, users have found that the range of permittivity and conductivity values given in this Recommendation is not great enough to include the range of values indicated in Table I of Report...(G.1.e(V)).

With the availability of an electronic computer at the I.T.U. headquarters, it would be desirable for the C.C.I.R. Secretariat to undertake the task of setting up a computer programme that could be used for any specified set of  $\epsilon$  and  $\sigma$  values and with the intention of extending the curves in Draft Recommendation G.1.b(V). Thus account could be taken of a more comprehensive range of  $\epsilon$  and  $\sigma$  values and of the frequency range between 10 and 30 MHz not at present covered by this Recommendation or the C.C.I.R. Atlases.

In the preparation of the programme and of further curves, account should be taken, if possible, of the effect of the troposphere in accordance with the discussion given in Report...(G.1.k(V)) since over a considerable range of frequencies below 10 MHz its neglect may be more serious than errors due to uncertainties in the knowledge of  $\epsilon$  and  $\sigma$  along a given transmission path.

As height-gain effects can be of importance at frequencies well below 10 MHz, the opportunity might be taken of providing height-gain curves in due course. However, the limitations of their use would have to be carefully explained, as it is not proposed to adopt the presentation of height-gain information employed for frequencies above 30 MHz which would involve the preparation of an atlas large compared with the existing C.C.I.R. Atlases.

In the description of any revised curves, attention should be drawn to the relative importance at any given frequency of the permittivity and conductivity terms, which should be taken into account in the choice of values for which the curves are given. Reference should be made to the relevant information in Report...(G.l.e(V)).

No consideration has been given here to the effect of the ionosphere, but such a programme of work as here envisaged would be of special interest at frequencies in the medium- and low-frequency range where the ground-wave can be isolated by appropriate techniques. It would also represent a part fulfilment of the urgent requirements of medium- and low-frequency broadcasting.

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