Development of VLF/LF field strength prediction program using wave-hop theory

*Kenro Nozaki¹, Kuniyasu Imamura¹, Shigeru Tsuchiya¹, Kitauchi Hideaki²

1.National Institute of Information and Communications Technology, 2.Kitauchi Lab.

A numerical calculation program for VLF/LF radio wave field strength by means of wave-hop theory adopting the recommendations of the International Telecommunication Union Radiocommunications Sector (ITU-R). The electric field at the receiving point consists of a ground wave and sky waves of from 1-hop to 10-hop modes reflected between the ground and bottom of the ionosphere. Parameters at every ground and ionospheric reflection point are calculated for given day, time, transmitting power, transmitting/receiving location within 16000km. A detailed calculation algorithm and some characteristic results are presented.

Keywords: VLF/LF, field strength, wave-hop theory