

Study of Radio Noise for 45 Years

The author has been strongly associated with Commission E activity for many years, and has worked on different kinds of radio noises including natural and man-made noises. My topics may include, (1) plasma waves and their generation and propagation in the upper ionosphere/magnetosphere, (2) atmospheric electricity such as VLF/ELF sferics, lightning physics, and recently ELF waves (Schumann resonances, Q bursts), transient luminous emissions, global warming etc. (3) EMC (Electromagnetic compatibility) such as coupling of transmission lines, radiation from bent transmission lines etc., (4) Seismo Electromagnetics, electromagnetic noises associated with earthquakes for the sake of short-term earthquake prediction. Even though you may think that I have been working on different topics, I think that I have been treating just only radio noises from different regions (upper ionosphere, atmosphere, and lithosphere) around the Earth.

In my talk we will show some important findings in each research field, but we want to pay more attention to my recent greatest concern of electromagnetic noise from the lithosphere (or earthquakes) as a new science field. By carrying out a lot of international collaboration for many years, we could obtain a lot of lessons on what to do and how to do research, and I shall be happy if I could show you some of those lessons. I think that looking at the past will provide us with a bright future.