ABSTRACT:

The terrestrial ionosphere extends from about 100 km to 1000 km altitude above the surface of the Earth. The ionosphere forms the transition region between the neutral atmosphere below and the fully ionized space environment above. On a clear night, we are all able to observe a dynamic aspect of the ionosphere in the aurora borealis or northern lights. The formation and characteristics of the ionosphere will first be introduced, followed by recent observations using radars to probe this dynamic near-Earth space environment. This part of the presentation will be predominately focused on results from a new high resolution E-region radar known as ICEBEAR.