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An overview of scintillation arc features observed in Delay-Doppler Spectra from the ionospheric and inter-stellar scintillation domains.

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The physics of radio scintillation through a plasma environment is common across a vast range of size and time scales. In the interstellar environment, variations in radio scintillation take place over distances measured in parsecs and observed over timescales of months, with the scale sizes of plasma structures of order 100s of AU. In the ionosphere, radio scintillation can vary considerably over timescales of a few seconds and results from plasma scale sizes ranging from 10s of meters to several km. In both fields, a common analysis technique when using wide bandwidth scintillation observations is to apply a 2-D Fourier transform to the dynamic spectra. The resulting is often termed the 'secondary' or 'Delay-Doppler' spectra. It is common to observe the formation of scintillation arcs in both interstellar and ionospheric scintillation in the delay-Doppler spectra with a variety of interesting features (this is also true for solar-wind generated interplanetary scintillation). SERENE at the University of Birmingham, and the Pulsar timing group at Max-Planck Institute for Radio Astronomy, have recently met to discuss these phenomena. Here we present some examples of the variations in delay-Doppler spectra scintillation arcs from both the interstellar and ionospheric domains as recorded by LOFAR and explore some of the common features and differences between them.