

Typiske eksamensspørsmål

Explain the basic principle of satellite-based positioning!

Why is the concept of correlation so important in the context of GNSS?

What is the purpose of each of the three layers of GNSS signals?

Describe the process of acquisition!

Various regions along the signal path cause the signal to be delayed. Why are we talking about delays and what is the conceptual connection between the refractive index and the delay?

Why is the electron density in the ionosphere such an important parameter in the context of GNSS?

What is the Appleton-Hartree formula and what does it describe?

What are scintillations and how can we measure them?

How could you mitigate the effects of scintillation in a GNSS receiver?

What is instability?

What are the three main fluid-like instabilities in plasmas?

What are the major space weather challenges in the equatorial region?

What is a polar cap patch, how are they generated, and what is its space weather importance?

What is the "cusp" and what is its significance for space weather?

What indices do we use to quantify global magnetic disturbances, geomagnetic storms, and auroral substorms? What do they measure?

What are the phases of a magnetospheric substorm and how is it different from a magnetic storm?

What is the expected impact of the solar activity cycle on terrestrial space weather?

If you were to develop a space weather model that predicts GNSS signal quality, what parameters would you choose as driving/input parameters? How - if at all - would you include solar activity?

Besides causing disruptions for GNSS, what other space weather effects are there?