

## School of Physical Sciences Seminar

Speaker: **Dr. Alexandra Fogg (DIAS)**

Title: **An assessment of Solar Wind - Magnetosphere - Ionosphere coupling using terrestrial radio emissions.**

Date: **Mar 3<sup>rd</sup> 2022**

Location: **Zoom only** at the following link:

<https://dcu-ie.zoom.us/j/99145308425?pwd=WjdLUE5xSDBLS3p5Q216UFd3WHkyUT09>

Meeting ID: 991 4530 8425

Passcode: 923541

**Description:** The Earth's magnetosphere is formed and primarily driven by its interaction with the solar wind and interplanetary magnetic field. The effects of this interaction can be seen throughout the magnetosphere as Space Weather, and in this talk Auroral Kilometric Radiation (AKR) will be the primary focus. AKR emanates from the same acceleration regions which famously excite the auroral ionosphere, and as such is a barometer for activity in the magnetosphere. AKR is observed by the WAVES instrument on board the Wind satellite, and is automatically selected from amongst a complex background of emissions using a novel technique. These automatically detected events will be used to allow statistical analyses of solar wind driving of the magnetosphere. Finally, mutual information theory will be used to derive average coupling timescales between AKR and ionospheric intensifications.