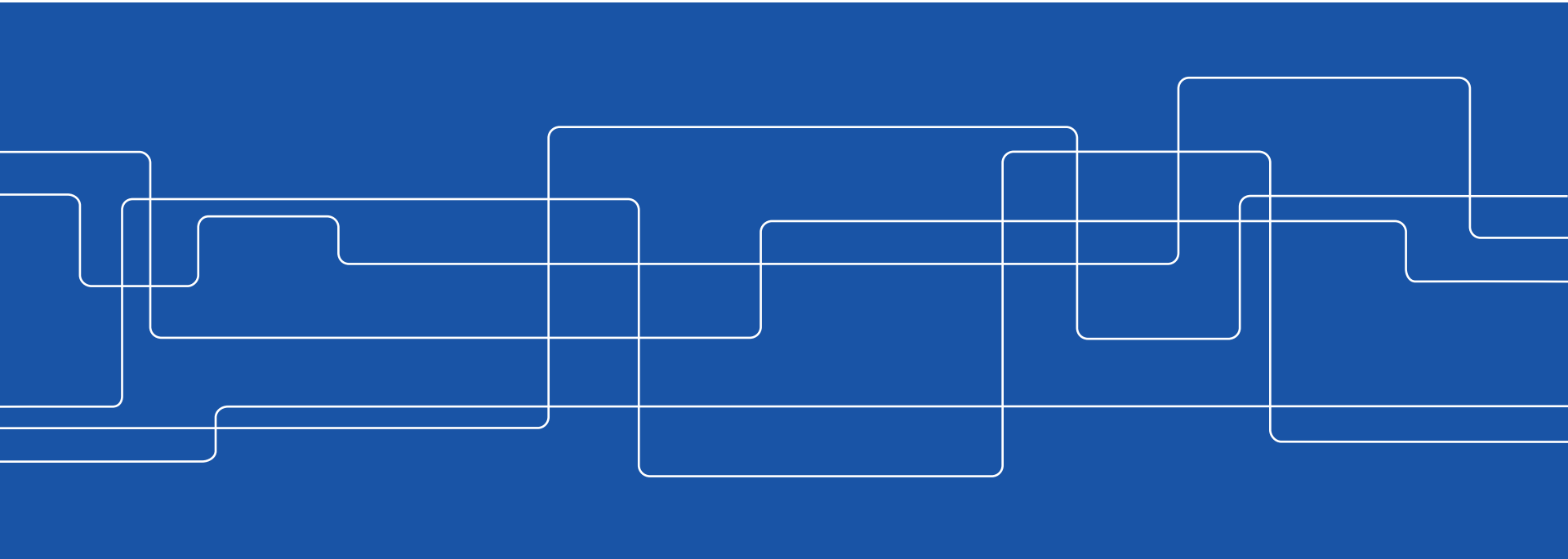# Geodetic Space Related Research at KTH

at XXVIII Planetary Congress, ASE

by Professor Anna Jensen

Geodesy

- **Geodesy** is the science of the size and shape of the Earth, and of Earth's gravity field
  - Involves both theoretical studies and studies in technologies for data collection

- Space technology is widely used for data collection in geodetic research

- Two examples of KTH research are satellite gravimetry and GNSS

Satellite Gravimetry

Spaceborne sensors collect data which can provide information on Earth's gravity field. Examples are the missions GOCE and GRACE

At KTH we currently work on:

- Determination of Earth´s mass structure using satellite gravimetry

- Studies of climate change (sea level rise) using GRACE data and satellite altimetry

Images: ESA, NASA and DLR
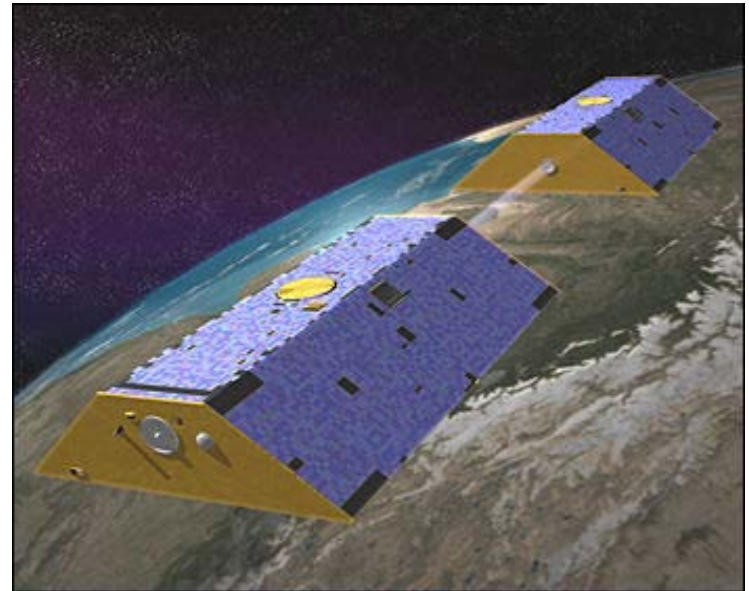
GNSS based high accuracy positioning

GNSS – like GPS, GLONASS, Galileo and Beidou can be used for high accuracy positioning at the cm or mm-level

At KTH we work on algorithms and models for improved position accuracy and reliability with multi-GNSS applications

Is used e.g. for airborne remote sensing, machine guidance, and land surveying

Photos: DTU-EMI and World Highways