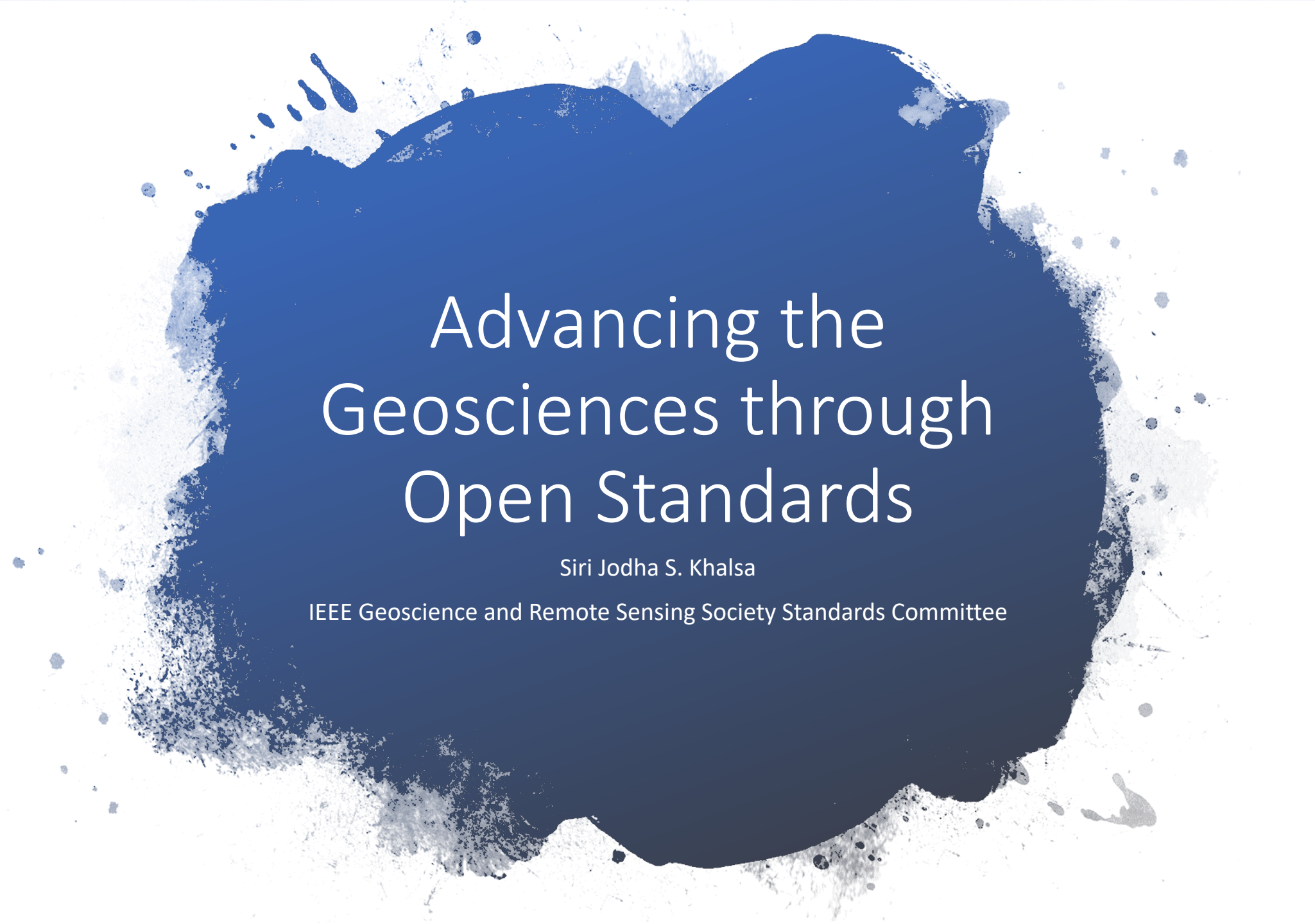




Advancing the Geosciences through Open Standards

Siri Jodha S. Khalsa

IEEE Geoscience and Remote Sensing Society Standards Committee

Standards...

- I'd rather not be bothered
- Necessary evil
- Can't we all just play nicely together?
- Somebody else's business



Technical Standards

- Underpin nearly everything you do in daily life
 - The internet, transportation, manufacturing, medicine...
 - How data is acquired, encoded, transmitted, archived, distributed

Standards Support Open Science

- Sharing of data, methods and results depends on the ability of others to find, access and understand those data and methods

Developing a Standard

Begins with need for interoperability, consistency or consolidation

Process must be fair and transparent (needs governance)

Should include representatives of all groups who might be impacted

Individuals bring their own interests and expertise

Fostering consensus among competing interests is a primary role of a Standards Development Organization

Developing a standard takes the time and effort of many people

The Geoscience and Remote Sensing Society (GRSS) Standards Committee

Like many IEEE Societies, the GRSS has a committee devoted to identifying and promoting potential standards development projects

Initiated in 2016, the committee has so far sponsored six projects with the IEEE Standards Association

These projects collectively involve over two hundred people from industry, academia and national laboratories

Current Standards Projects

- **IEEE P4001:** Characterization and Calibration of Ultraviolet through Shortwave Infrared **Hyperspectral Imaging Devices**
- **IEEE P4002:** **Synthetic Aperture Radar** Metadata Content
- **IEEE P4003:** Global Navigation Satellite System-**Reflectometry** (GNSS-R) Data and Metadata Content
- **IEEE P4004:** Calibration of **Microwave Radiometers** in the 300 MHz to 1 THz Frequency Range for Geoscience Applications
- **IEEE P4005:** Protocol and Scheme for Measuring **Soil Spectroscopy**
- **IEEE P4006:** Remote Sensing Frequency Band **Radio Frequency Interference** (RFI) Impact Assessment

Upcoming...

- **IEEE P4007:** Recommended Practice for Evaluation of Radio Frequency Interference (RFI) Impact in Remote Sensing Missions
 - Means of providing quantitative measures of RFI and its impact on remote sensing operations and products
- **IEEE P2990:** Standard for Resilient Positioning, Navigation and Timing (PNT) User Equipment
- Strong interest from industry for an Analysis Ready Data standard
- Broad interest in standards to enable sharing of Machine Learning Models and training datasets

Summary



Contributing to the development of standards can be educational, rewarding and beneficial to science and society



To learn more about the GRSS-SC visit our [webpage](#) or read [this article](#).



[This link](#) has instructions on how to join project mailing lists, etc.



[Fun video](#) describing progress on making a standard for hyperspectral imagers