

ISR SUMMER SCHOOL  
12-17 August 2019  
Pikku-Syöte  
Syöte, Finland

Agenda

Last school's material: [tinyurl.com/2018ISR](http://tinyurl.com/2018ISR)

Monday

- 09:00 Shuttle from Oulu train station to Pikku-Syöte
- 11:00 Arrive at Pikku-Syöte, Check-in, accommodate everyone
- 12:00 *Lunch*
- 13:00 Welcome (*Thomas Ulich, Elizabeth Kendall*)  
Introduction of participants and instructors (*Thomas Ulich and Elizabeth Kendall*)  
Addressing computer needs and other logistics (*Thomas Ulich, Bill Rideout*)  
Group assignments (*Thomas Ulich and Elizabeth Kendall*)
- 13:45 Introduction to the Ionosphere (*Anita Aikio*)
- 14:30 Radar as a Black Box (*Bill Rideout*)
- 15:15 *Break*
- 15:45 Radar 1: Radar Physics (*Anthea Coster*)
- 16:30 ISR Theory 1: The Short Introduction to Incoherent Scatter (*Anita Aikio*)
- 17:15 Ionosphere - Radar Data Examples (*Anita Aikio*)
- 17:30 MADRIGAL Database and Group Work (*Bill Rideout*)
- 19:00 *Dinner*
- 20:00 OPEN: Elective: MIT IAP Small Radar discussion and demonstration (*Phil Erickson who is doing this, or do we skip it?*)

Tuesday

- 07:30 *Breakfast*
- 08:30 Ionosphere - Radar Data Example Discussion (*Anita Aikio*)
- 08:45 Radar 2 (*Ilkka Virtanen*)
- 09:30 Radar 3: Statistical Signal Processing (*Roger Varney*)
- 10:15 *Break*
- 10:45 ISR Theory 2 (*Roger Varney*)
- 11:30 Interpreting Incoherent Scatter Radar Data (*Ian McCrea*)
- 12:15 *Lunch*
- 13:30 Experiment Design and Data Analysis (*Carl-Fredrik Enell, Roger Varney, and Bill Rideout*)
- 14:15 Arecibo, and Jicamarca modes during experiments (*Elizabeth Kendall*)
- 14:30 Experiment Design (group work)
- 15:00 *Break*
- 15:30 Experiment Design (group work)
- 18:00 Deadline to submit group experiments
- 19:00 Start of Experiment Night - see separate timetable  
(16 UTC to 22 UTC, 2 h per group, 2 groups parallel, 19 LT - 01 LT)  
*Dinner* - interleaved with experiments

### Wednesday

- 07:30 *Breakfast*
- 08:30 EISCAT Scientific Association (*Craig Heinselman*)
- 09:00 The NSF Upper Atmosphere Facilities Program (*Carrie Black via video link*)
- 09:30 ISR Theory 3 (*Ian McCrea*)
- 10:15 Retrieve radar data and start to work on group assignments (coffee available for *break*)
- 12:00 *Lunch*
- 13:00 Excursion
- 19:00 *Banquet*

### Thursday

- 07:30 *Breakfast*
- 08:30 Pitfalls in Geophysical Data: Dealing with Errors (*Thomas Ulich*)
- 09:15 Data Analysis and Fitting 1 (*Ashton Reimer and Roger Varney*)
- 10:00 *Break*
- 10:30 Data Analysis and Fitting 2: (*Carl-Fredrik Enell*)
- 11:15 ISR Science Highlights (*Ian McCrea et al.*)
- 12:00 *Lunch*
- 13:00 History of Radar (including some facts about SGO; *Thomas Ulich*)
- 13:30 Work on assignment and presentation (coffee available for *break*)
- 19:00 *Dinner*

### Friday

- 07:30 *Breakfast*
- 08:30 Question and answer session (*all*)
- 10:00 *Break*
- 10:30 Active ionospheric modification (*Antti Kero*)
- 11:15 Phased arrays (*Craig Heinselman*)
- 12:00 *Lunch*
- 13:00 AMISR (*Roger Varney*)
- 13:30 EISCAT\_3D (*Craig Heinselman*)
- 14:00 Work on assignments and presentations (coffee available for *break*)
- 19:00 *Dinner*

### Saturday

- 07:30 *Breakfast*
- 08:30 Student presentations (3x30 min)
- 10:00 *Break*
- 10:30 Student presentations (3x30 min)
- 12:00 Conclusions, Evaluations, and Closing Discussions
- 12:30 *Lunch and packing*
- 14:00 Departure: Shuttle from Pikku-Syöte to Oulu train station