COURSE COORDINATOR

Dr. Luca Salghetti Drioli, Antennas and Sub-millimeter Waves Section D/TEC- EEA. luca.salghetti.drioli@esa.int

COURSE VENUE

European Space Agency (ESA) - European Space Research and Technology Centre (ESTEC)

IN THE VICINITY

LEIDEN AMSTERDAM

REGISTRATION FEE

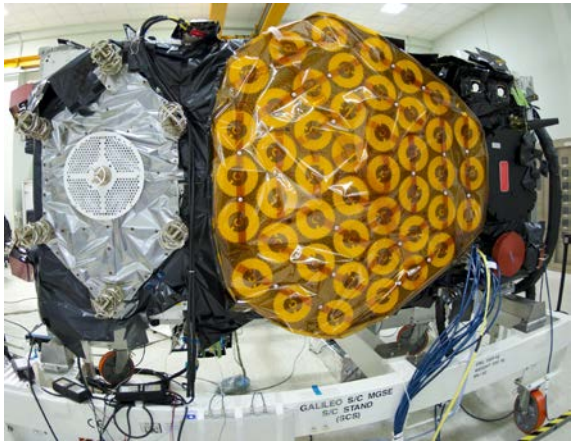
The registration fee for the course is:

- No-profit institutions: 500 Euro;
- Profit institutions: 1200 Euro;

European School of Antennas

First Announcement of the course on

Antennas for Space Applications



12 March - 16 March 2012
ESTEC, Noordwijk, The Netherlands

Organized and coordinated by the European Space Agency (ESA) - European Space Technology and Research Centre (ESTEC)

esa

INTRODUCTION

The European School of Antennas (ESoA) is a new model of a geographically distributed school which aims to improve the antenna advanced training and research in Europe. The school is constituted by a highly qualified integrated set of advanced courses at post-graduate level, distributed in the most accredited European research centres on antennas. Attendance is expected by PhD students and young engineers in the antenna domain.

The general objectives of the School are:

- strengthening the European excellence on antennas;
- completing the individual PhD curricula of students in Electrical and Information Engineering by offering interaction with the best trainers in Europe;
- increasing the link between European Universities and Industries in antenna research and development;
- facilitating the interchange of ideas among early stage researchers and teachers, thus increasing the future mobility and synergy.

The school is furnished with a centralized WEB support and it is coordinated so that the courses have the same format and apply common basic rules for exams and credits.

COURSE OBJECTIVES

The aim of the course is to give an overview of design approaches, constraints and technical solutions for Space Antennas addressing both theoretical and technological issues. The course will focus on main space applications such as telecommunication, earth observation and science, but will also address other uses of antennas for space, such as navigation, data transmission antennas. The lectures will cover radiofrequency, mechanical and thermal design, material technology and test aspects, ending with a visit to ESTEC satellite and antenna test facilities.

COURSE TOPICS

The course is structured by domain of application (Telecommunication, Earth Observation and Science). For each domain an introduction illustrating the different requirements and constraints for the antenna design is presented and antenna design and technologies are discussed.

The course content is as follows:

1. Introduction to space antennas;
2. Antennas for fixed/mobile and broadband telecommunications;
3. User terminals for mobile communications;
4. Passive and active instruments for Earth Observation;
5. High frequency science microwave instruments;
6. TTC and data transmission antennas;
7. Ground station antennas;
8. Navigation antennas;
9. Mechanical and thermal design of space antennas;
10. Antenna RF, mechanical and thermal test techniques and facilities;

TEACHERS

- Jean-Christophe Angevain (ESA-ESTEC – Antenna and Sub-millimeter wave Section)
- Piermario Besso (ESA-ESOC – Head of Ground Station Antennas Section)
- Peter de Maagt (ESA-ESTEC – Antenna and Sub-millimeter wave Section)
- Cyril Mangenot (ESA-ESTEC – Head of Antenna and Sub-millimeter wave Section)
- Maurice Paquay (ESA-ESTEC – Antenna and Sub-millimeter wave Section)
- Luca Salghetti Drioli (ESA-ESTEC – Antenna and Sub-millimeter wave Section)
- Julian Santiago Prowald (ESA-ESTEC – Mechanical Structure Section)
- Giovanni Toso (ESA-ESTEC – Antenna and Sub-millimeter wave Section)

COURSE GENERAL INFO

Schedule:

37 hours (30h lectures, 5h discussions/exercises, 2h visit ESTEC Test facilities)

Prerequisites:

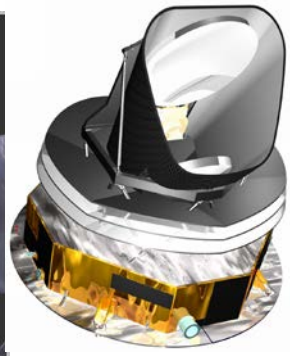
Basic antennas

Availability:

35 participants

Credits:

2 ECTS credits



(Courtesy of MDA Corp., Thales Alenia Space, Astrium.)