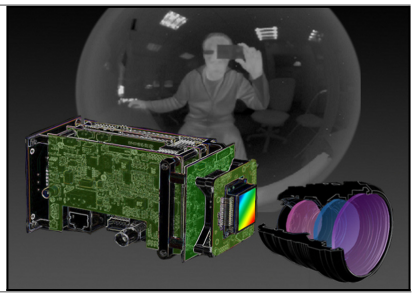
INSTITUT d'OPTIQUE GRADUATE SCHOOL | Continuing Education
Formation Continue

SC11 | Design of infrared cameras



LEVEL: SPECIALIZED

Audience: Engineers of companies and administrations involved in defense, surveillance, aerospace or astronomy applications, wishing to master the analyse and the design of infrared cameras

Prerequisites: Basic knowledge corresponding to EF2 - Basics of optics

Pedagogical manager(s): Isabelle Ribet - Experte Onera, enseignante à l'Institut d'Optique

Language of the training: French

Maximum capacity: 12

Price: 1820€ HT - **Duration:** 4 days - 28 h

Objectives

- Have an overview of the problematic of infrared cameras design
- Discover the key parameters associated to this design
- Discover the state-of-the-art of components and modules
- Be able to specify, design and evaluate infrared cameras (cooled or uncooled)

Next sessions

- 29 september 2020 au 02 october 2020 - Palaiseau

Addressed topics

Infrared radiometry
- Thermal infrared

Infrared detectors
- Characterization, main technologies (cooled or uncooled)
- Proxy electronics
- Cryogeny

Dimensioning of an infrared system, link budget
- Design of an infrared system, performance predictions
- Infrared image visualisation

SC11 | Design of infrared cameras

The program

Infrared detection
- Thermal infrared
- Infrared detectors: principles
- Infrared technologies (cooled and uncooled)
- Proxy electronics
- Infrared detectors characterisation

Design of an infrared system
- Design of infrared optics
- Infrared image visualisation
- Design of an infrared system
- Performance prediction
- Exercice: design of a cooled infrared camera

Labwork
- Characterisation of a cooled photodiode
- Characterisation of an uncooled camera

Methodology and assessment

Lectures and exercices
Interactive demonstrations
Labwork

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