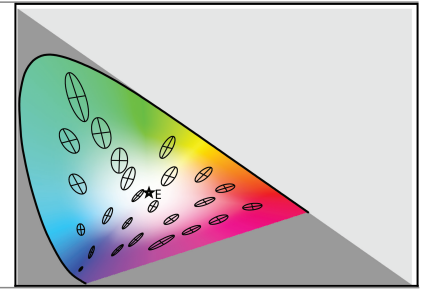


## EF5 | Colorimetry



NIVEAU : DÉBUTANT

**Publics :** Technician and engineers who need to use colorimetry concepts and/or colorimeters

**Prérequis :** Basic knowledge in radiometry and spectroradiometry (quantity and units...) may be useful but a reminder is proposed at the beginning of the training

**Responsable(s) pédagogique(s) :** Hervé Sauer - Enseignant-chercheur à l'Institut d'Optique

**Langue de la formation :** Français

**Capacité maximum :** 12

**Prix :** 1100€ HT - **Durée :** 2 days - 14 h

### Objectifs

- ▶ Understanding the fundamentals of color perception in human vision
- ▶ Mastering CIE colorimetry (XYZ, xy,  $L^*a^*b^*$ ,  $L^*u^*v^*$ ,  $u'v'$ ... spaces and coordinates)
- ▶ Understanding color measurement principles and manipulating different kinds of colorimeters
- ▶ Discovering the notions of illuminants, correlated color temperature, etc.

### Dates et lieu des prochaines sessions

- ▶ 01 avril 2019 au 02 avril 2019 - Palaiseau

### Thèmes abordés

Photometry and spectroradiometry.

Physiological fundamentals / Grassmann laws

CIE 1931 and 1964 color matching functions, XYZ space, xy chromatic coordinates, ...

CIE 1976 Uniform Color Spaces (CIELUV, CIELAB)

Light sources and standardized illuminants, ...



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### Le programme

Introduction on photometry and spectroradiometry

Colorimetry fundamentals:

- ▶ Physiological foundations, Grassmann laws, CIE 1931 standard observer and XYZ standard

Additive and subtractive color mixing

Color measurements:

- ▶ standardized measurement geometries, colorimeter and spectrophotometer principles

More advanced notions:

- ▶ CIE 1964 standard observer, CIE 1976 Uniform Color Spaces, sources and illuminants, CCT, CRI...

### Méthodologie et évaluation

Lectures and exercises (tutorials)

Live show of colorimetry measurements with real instruments

Lab works with commercial instruments