Course on Digital Signal and Image Processing “on field”

Teacher: Marco Seracini, Research fellow, Department of Physics and Astronomy "Augusto Righi", University of Bologna

Dates: February 6th, 13th, 20th and 27th (h. 10-13; h. 15-17)

- Summary of the main Mathematical operators used in Signal and Image Processing.
- Sampling theorems.
- Analog to digital conversion.
- Linear filters.
- Signal and Image processing operators with examples and applications.
- Multiresolution analysis.
- Shannon Entropy.
- Signal and Image Processing Algorithms and their fields of application.
- IMAGEJ , MATLAB and their applications to image processing.

Reference texts

Notes and slides of the teacher. Some books will be recommended.

Learning outcomes

The course provides knowledge of the major concepts of image processing.

Prerequisites

The course is self contained. When needed, the necessary mathematical instruments will be introduced and recalled for each specific topic, to give all the students the opportunity of a complete understanding.