

Spettro, spettro delle mie brame

From light to insight: remote sensing in action

This educational experience for students consists of two phases: an initial theoretical introduction followed by a hands-on session.

In the first phase, students are introduced to the concept of the electromagnetic spectrum and its different bands. The goal is to help them understand that each band of the spectrum has specific characteristics, with corresponding advantages and disadvantages depending on the context of use. For example, optical (Figure 1) and microwave () images demonstrate how the characteristics of an area are described using different bands/sensors.



Figure 1. Optical images during a flooding event.

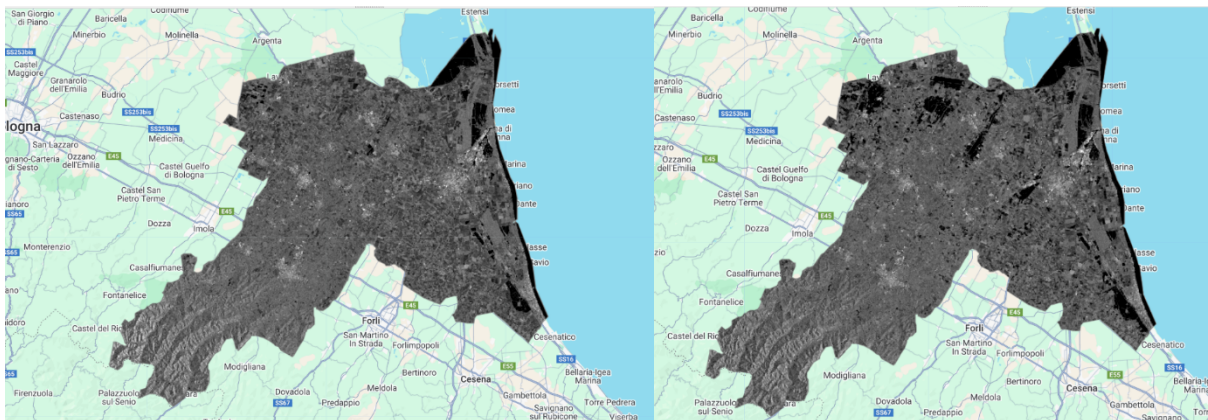


Figure 2. Microwave images before (on the left) and after (on the right) a flooding event.

Following the theoretical discussion, students will take part in a practical activity using a simple photographic setup. The goal is to examine how optical imaging in the visible spectrum interacts with different types of objects.

Students will observe and analyze various materials, such as: healthy and dry vegetation to study differences in light reflection, a block of ice or snow to understand how light interacts with translucent materials, liquid dispersions in the air, simulating the way light behaves with clouds.

Take home messages for the students: how different materials reflect light and how we can use the electromagnetic spectrum and its different bands for environmental assessment.