Saline wetlands of Monegros in the Ebro basin (Spain) are high-priority habitats influenced by spatial and edaphic gradients determined by arid climate and extreme salinity. Their surface is heterogeneous, including sparse vegetated spots and bare soil. The halophytes *Arthrocnemum macrostachyum* and *Suaeda vera* are common, as well as *Lygeum spartum*. The look of the bare surface changes quickly (ponding, moisture, efflorescence). The individual spectral properties of each cover have been studied on six wetlands for two years.

1. BIOPHYSICAL PARAMETERS
   - Mapping vegetation cover (%)
   - Soil parameters: Color and moisture (top layer)

2. SURFACE REFLECTANCE
   - Spectrometer readings
   - 6 - 10 sites/transect
   - 2 summers (July)
   - Height ~ 1,5 m

3. PRELIMINARY RESULTS:
   - Spectrometer / Quickbird image
   - Modified Soil Adjusted Vegetation Index

CONCLUSIONS
- Vegetation >20 cm-tall and +60% of covering shows good relation Spectrometer / Quickbird image ($R^2\approx1$).
- Light colors or senescent vegetation have similar reflectance to bare soil (>20%), and organic matter and moisture decrease a 10% of reflectance.
- Subpixel approach is needed. The vegetation is underestimated due to low covering and high reflectance of soil in Quickbird images.

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