

# Points to consider:

**Spectroscopy workshop: Granada, Spain, 19-21 May 2010.[http://  
spectroscopyworkshop.weebly.com](http://spectroscopyworkshop.weebly.com)**

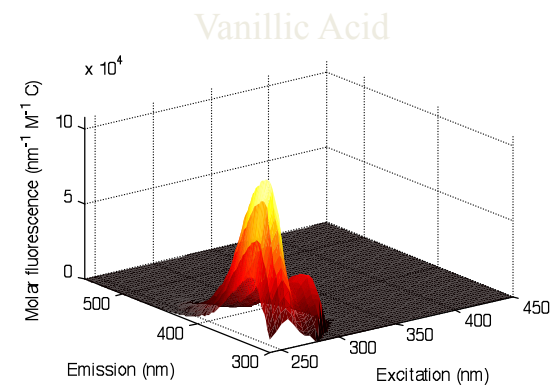
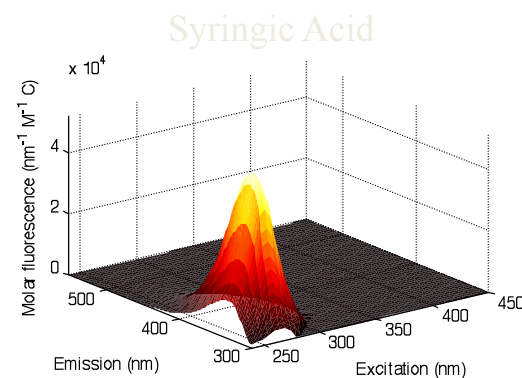
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# Terminology I

- Irrespective of location CDOM can always be grouped into two categories
  - Autochthonous: produced within the system being studied. e.g. released by organisms/processes within the system
  - Allochthonous: produced processes occurring outside and transported into the system.
  - Should we be more specific about the boundary of our study when we use these terms?
    - What about old oceanic material?
    - Material released from sediments?
  - Allo/auto-chthonous not to be used inter-changeably with “aquatic”/”marine” and “terrestrial”

# Terminology II

- Humic-like, protein-like
  - Remember the “like” part
  - Confusion: humic isolates contain amino acids (IHSS SRFA 2  $\mu\text{mol/g}$  tyrosine = 0.36 mg/g)
  - Aren’t we just referring to spectra with broad peaks
  - Hernes et al (2009): protein-like fluorescence region (Em 300-350 nm) with best correlation to lignin concentrations
  - Maie et al (2007): tryptophan peak can be chromatographically split into two, one correlated with N content and one correlated to humic fluorescence



# Terminology III

- How do we proceed with interpreting PARAFAC results?
  - What are we measuring? More experimental work required
    - Is linear addition assumption valid?
    - How are quenching effects handled by PARAFAC?
  - System for labelling components identified required
  - PARAFAC is very sensitive to instrument bias. A robust correction routine required.
    - A limitation for inter lab comparisons
    - Very important for modelling data collected on 2 or more instruments