

3) Synthetic data sets

- *Representative scenarios have been developed – further coordination among them*
- *There exist major gaps in the knowledge of the PFT-specific optical properties: , especially for particle backscattering*
- *Will the vertical distribution of IOPs become important for the accuracy of PFT inversion?*
- *Hyper-spectral satellite R_{rs} data are susceptible to large noise, which may not be neglected for PFT inversion. – PhytoDOAS starts from TOA-R and only considers differential absorptions... still challenging to transfer synthetic retrievals to satellite retrievals*
- *Even under well controlled conditions, absolute quantitative PFT retrievals remain challenging:*
 - *High similarity in a_{ph} spectra from different phytoplankton groups limited the capability of semi-analytical algorithms (e.g. GIOP) in accurately decomposing the phytoplankton absorption, resulting in unstable retrievals with > 2 PFTs as unknowns*
 - *Determination of a_{ph}^* for phytoplankton groups ($a_{ph}^* = a_{ph}/C_{chl-a}$): amplitude influenced by C_{chl-a} ?*
- *Spectral resolution: band study shows the spectral requirements to obtain PFT from ocean colour data are beyond current multispectral sensors specifications*