

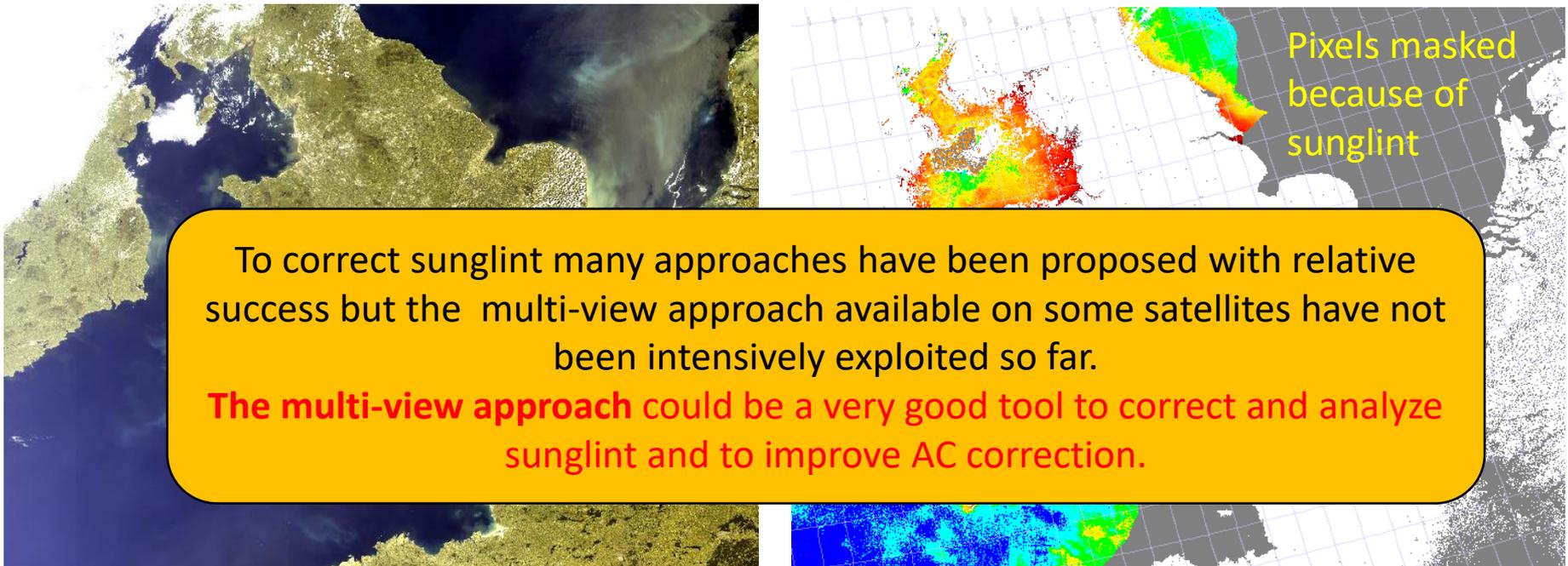
AQUALOOKS

**Improving atmospheric correction and aquatic particle retrieval with
bidirectional remote sensing data**

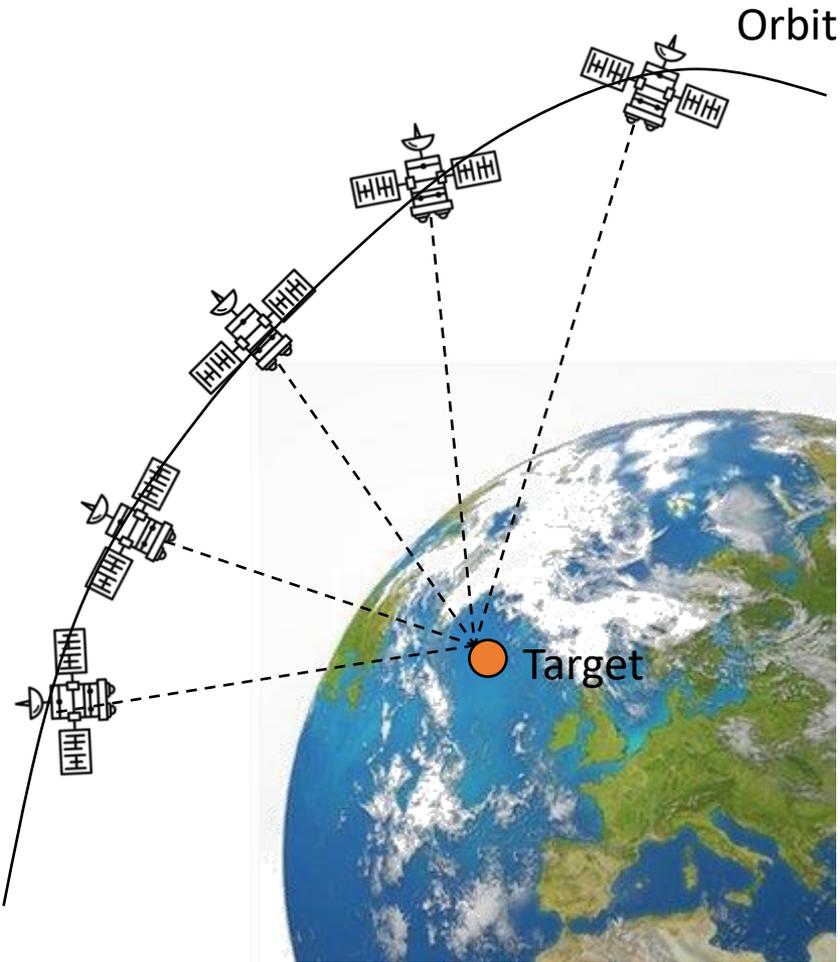
- **RBINS (Royal Belgium Institute of Natural Sciences)**
K. Ruddick & H. Lavigne
- **VLIZ (Vlaams Instituut voor de Zee)**
Cattrijsse & D. Vansteenvogen
- **FAU (Harbor Branch Oceanographic Institute, Florida Atlantic)**
University
M. Twardowski

The number of pixel masked because of high sunglint and atmospheric correction failure remains one of the main limitations of ocean color remote sensing

Sentinel 3 OLCI image 2017/18/06



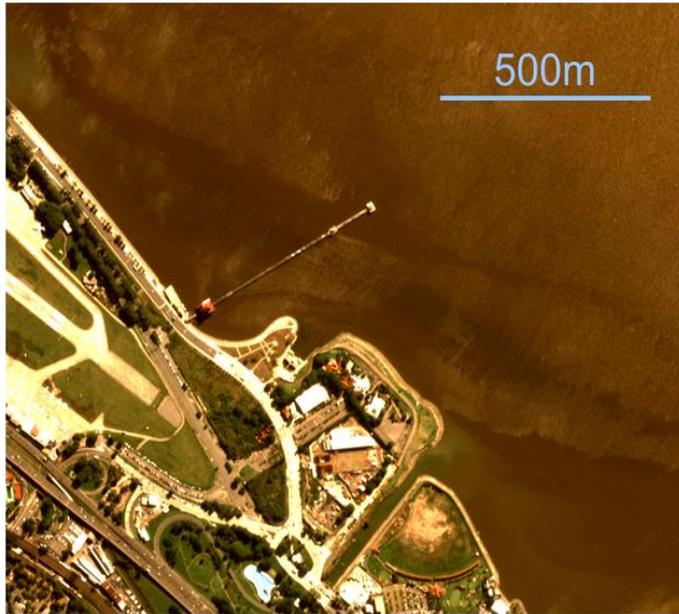
Remote sensing multi-view:
a same target, a same time: different viewing geometries



Multi-view satellites for AQUALOOKS:

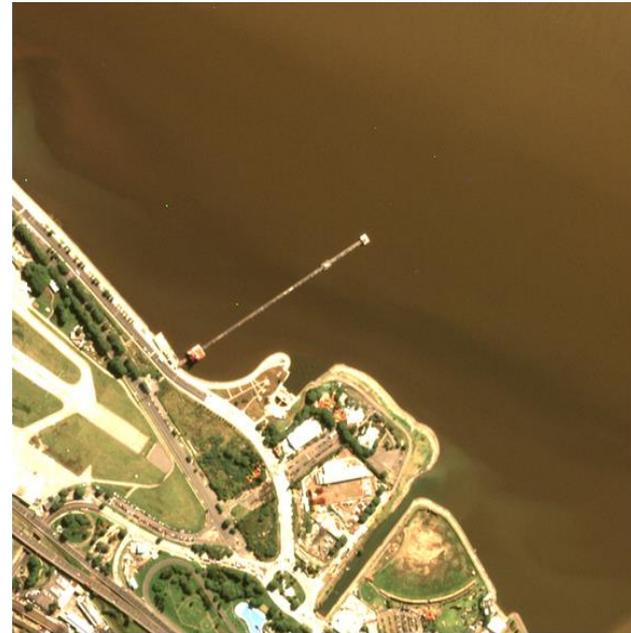
- **Pleiades** (dual or triad view)
- **CHRIS-PROBA** (5 images of a same target)
- **SEVIRI** (constellation of 3 satellites + geostationary satellite)

Multi-view imagery can be used to developed/validate sunglint correction algorithms.
(Dual-view Pleiades)



Pleiades, 2016-04-21, 14:05:39
(20.3° VZA into sun)

Apply sunglint removal
algorithms here



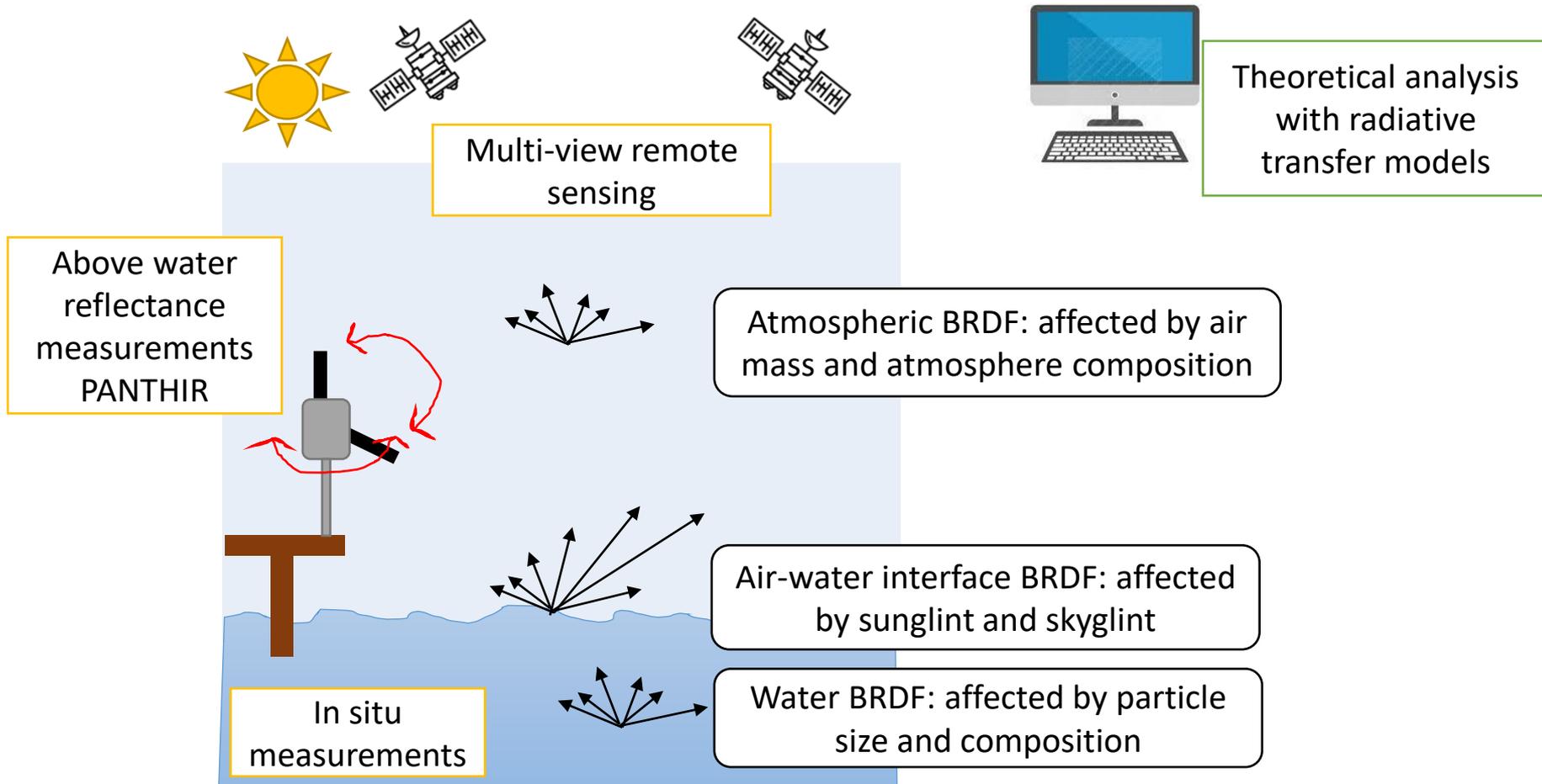
Pleiades, 2016-04-21, 14:04:37
(19.6° VZA away from sun)

Validate here

AQUALOOKS aims to better characterize BRDF from water to satellite in turbid waters

BRDF: Bidirectional Reflectance Distribution Function

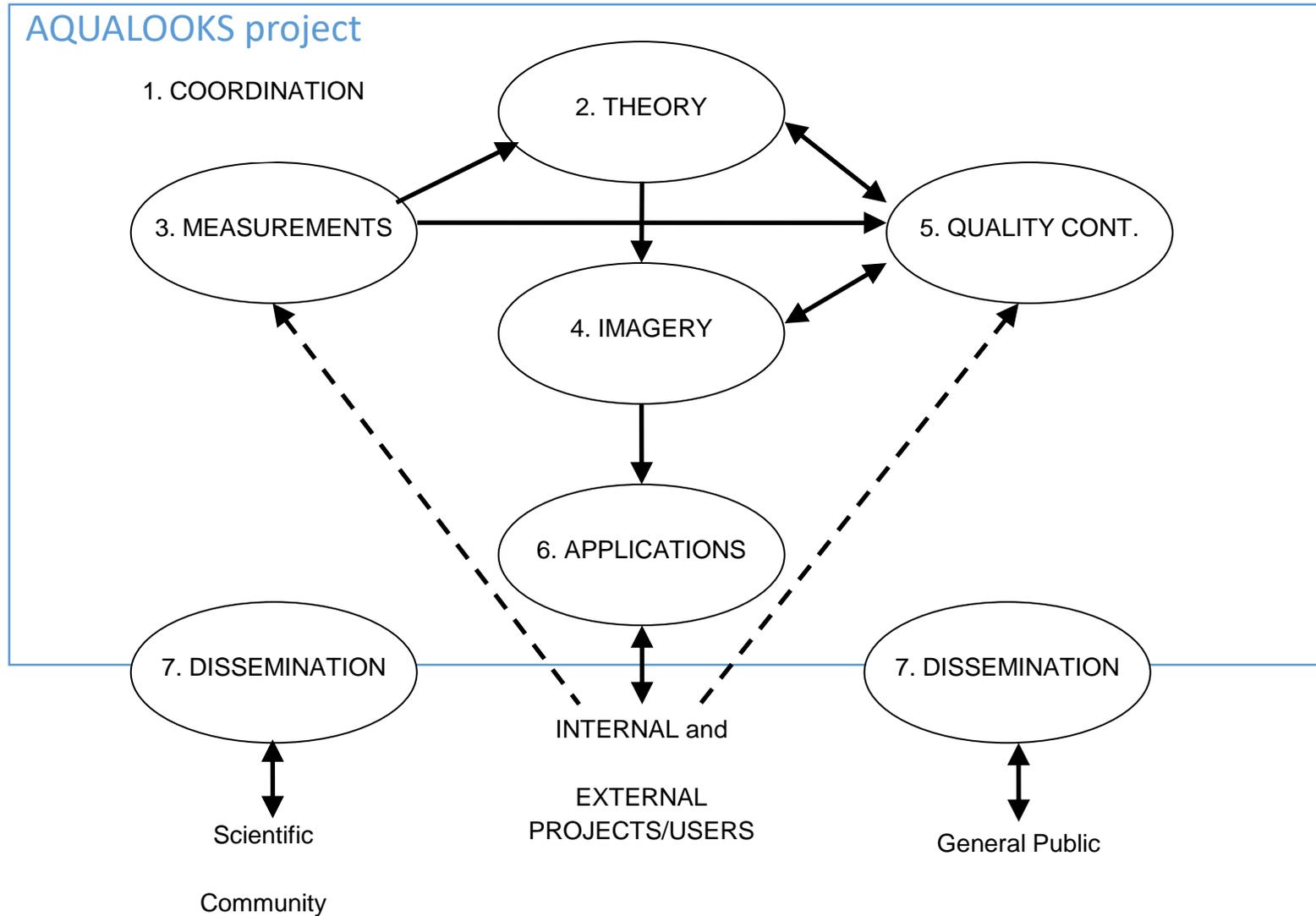
A function that defines how light is reflected by a surface. It is a function of illumination and viewing geometry.



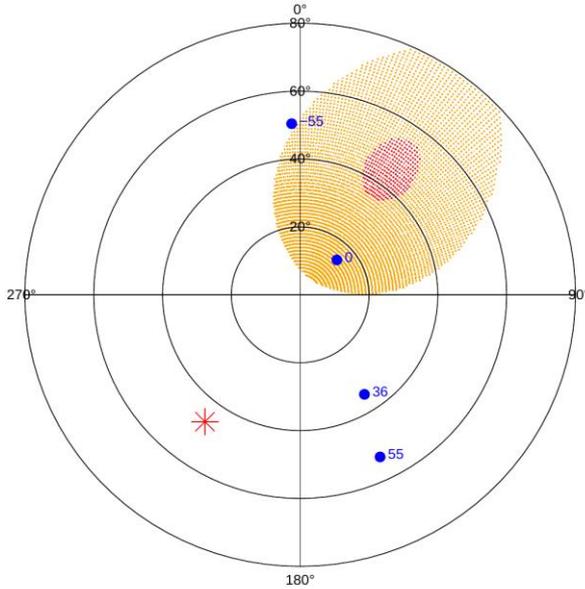
AQUALOOKS main objectives

- Design of **multi-look algorithms for improved atmospheric correction** over turbid waters
- Design and testing of **multi-look algorithms for improved air-water interface (including sunglint) correction** over turbid water
- Investigation of feasibility of **multi-look algorithms for retrieval of aquatic particle size/type**
- Refinement of a pan-and-tilt system for **above water radiometry to provide multi-look BRDF data**
- Provide recommendations for **future satellite missions**

REMSEM activities in AQUALOOKS



Multi-view imagery can be used to improve atmospheric correction algorithms.
(CHRIS-PROBA)



AERONET/CHRIS-PROBA comparison 2019/04/18 MOW-1 Maritime model

