

Combined Retrieval from Ground Based and Space-borne Measurements: New Possibilities for Surface Validation and Beyond

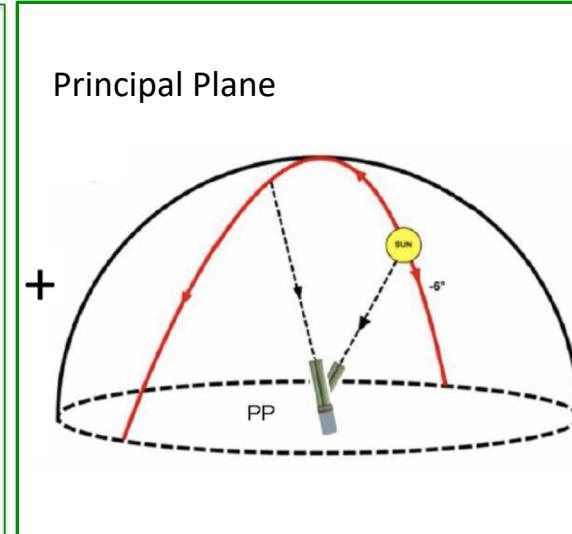
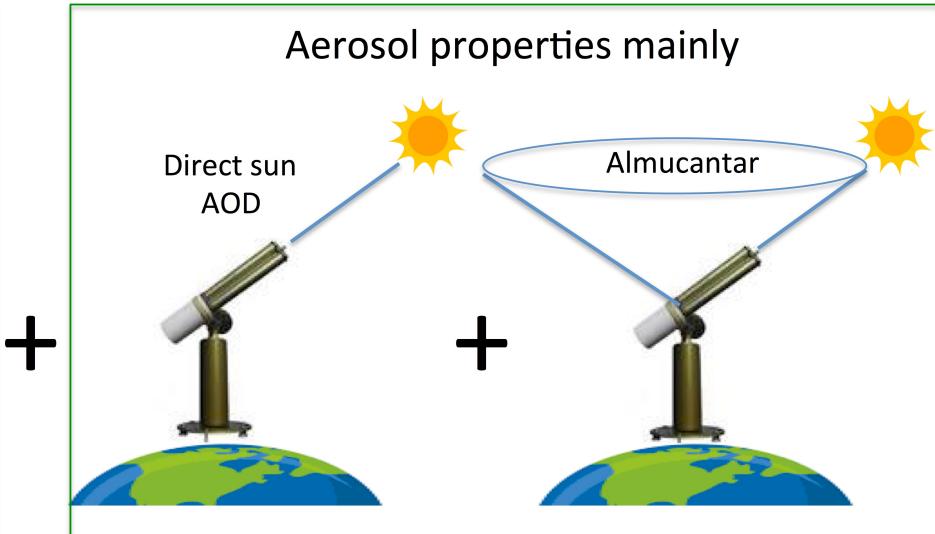
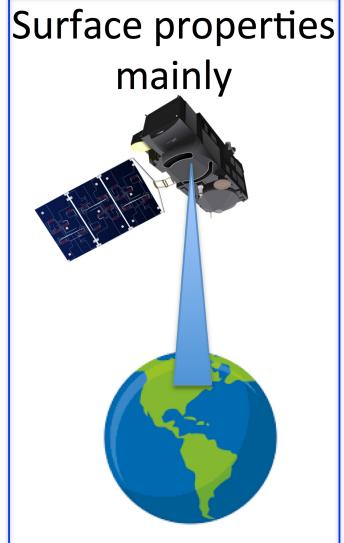
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1:  **GRASP**

2:  Laboratoire
d'Optique
Atmosphérique

3:  **cloudflight**

4:  **esa**



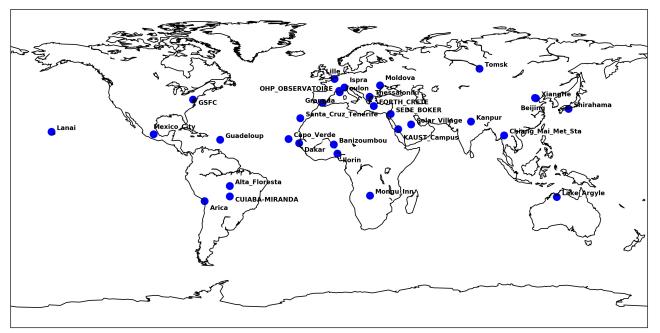
ESA GROSAT project:



Surface reference dataset Selected satellites

Satellite	Resolution	Product
S2/MSI	20m 1km	BRDF, albedos, surface reflectance
S3/OLCI	500m 10km	BRDF, albedos, surface reflectance
PARASOL/ POLDER	6km	BRDF, BPDF, albedos, surface reflectance
S5p/Tropomi	10km	BRDF, albedos, surface reflectance

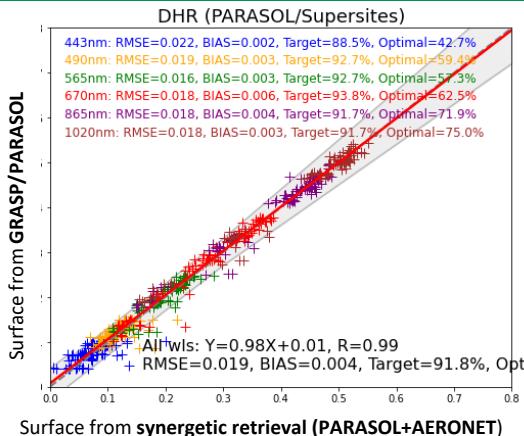
Selected AERONET stations



Synergetic Retrieval from Satellite and Ground Based Measurements: New possibilities

1. Surface products of high quality
2. Robust system for surface reference dataset over AERONET stations
3. System for aerosol and surface model developments and testing

Surface reference dataset: validation of satellite retrieval



Requirements BRDF/albedo	Uncertainties	
	Albedo <= 0.03	Albedo > 0.03
Target	0.04	0.03 or 10%
Optimal	0.02	0.01 or 5%

Synergetic satellite + AERONET retrieval: Studies of BRDF modelling uncertainties

