

Outreaching Swot (hydrology & oceanography)

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SWOT will be a cornerstone of hydrology from space, and will also be a completely new concept. Some pieces of explanations exists through JPL and through the CNES space technology training courses, but more will be done, with a major focus on hydrology, but not forgetting the ocean, and the complementarity with currents techniques, including nadir altimetry.

2021: Hydrology from space for lectures in classrooms

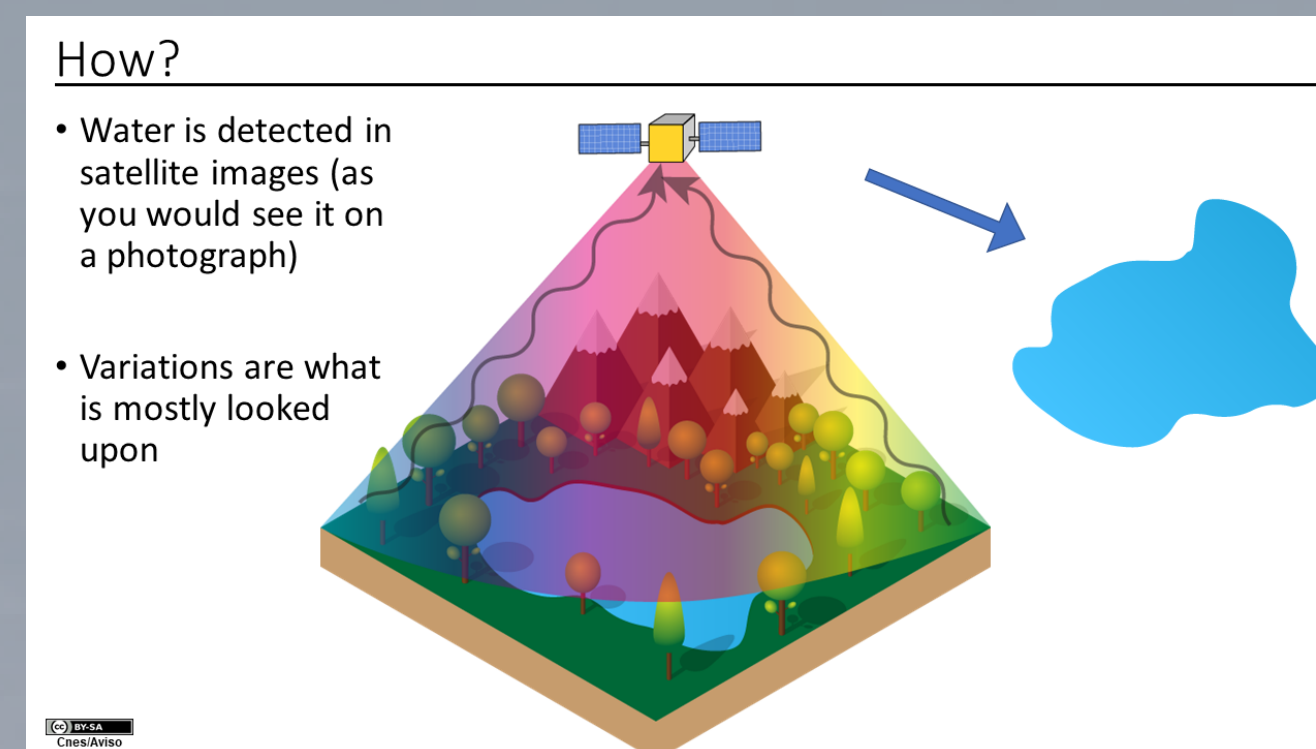
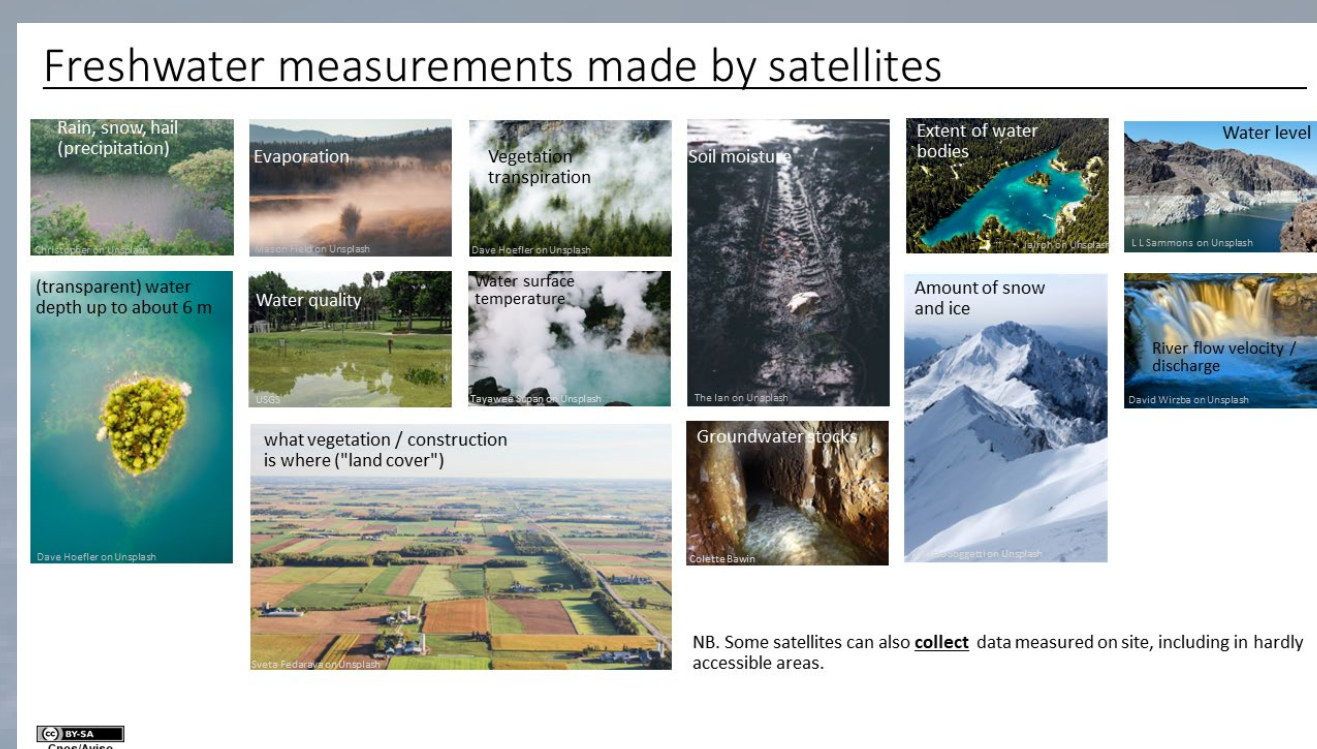
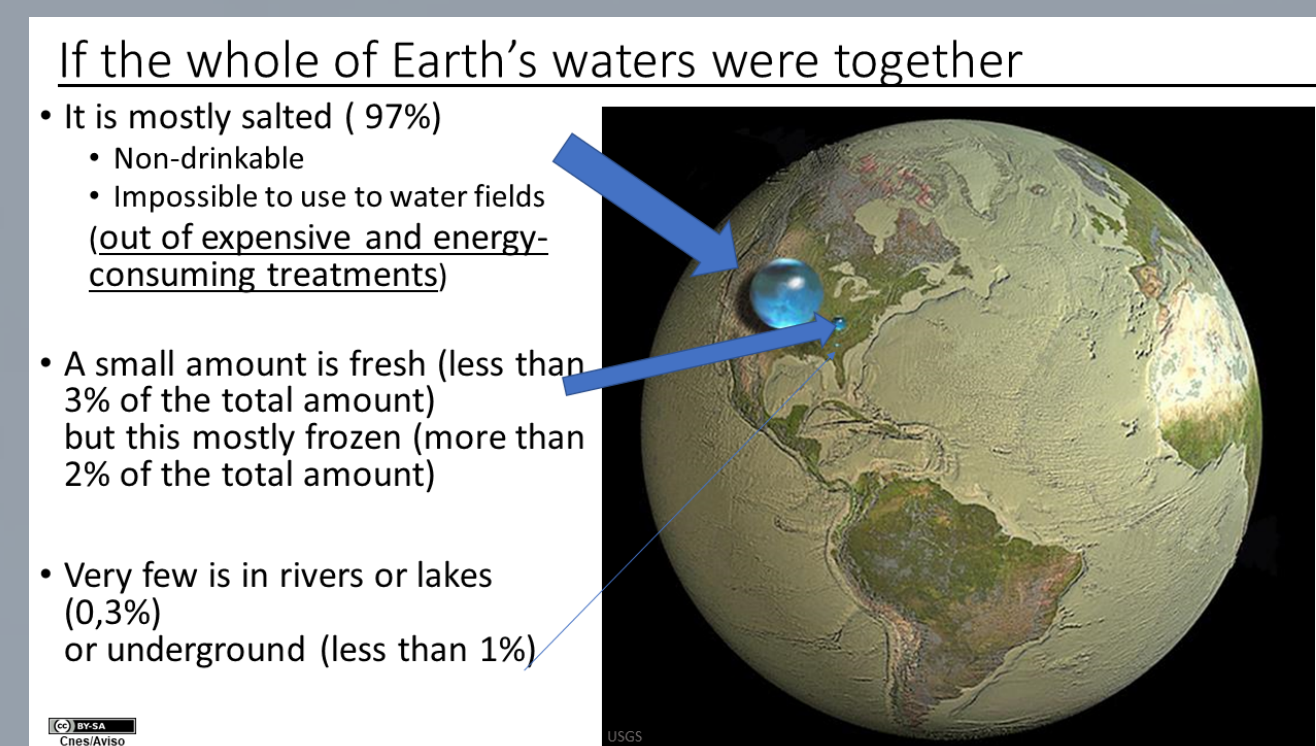
Swot will be a very new satellite, and also one among other hydrology satellites

→ need to sketch the rationale of observing & monitoring land waters

→ need to detail why it might be particularly interesting to do it from space

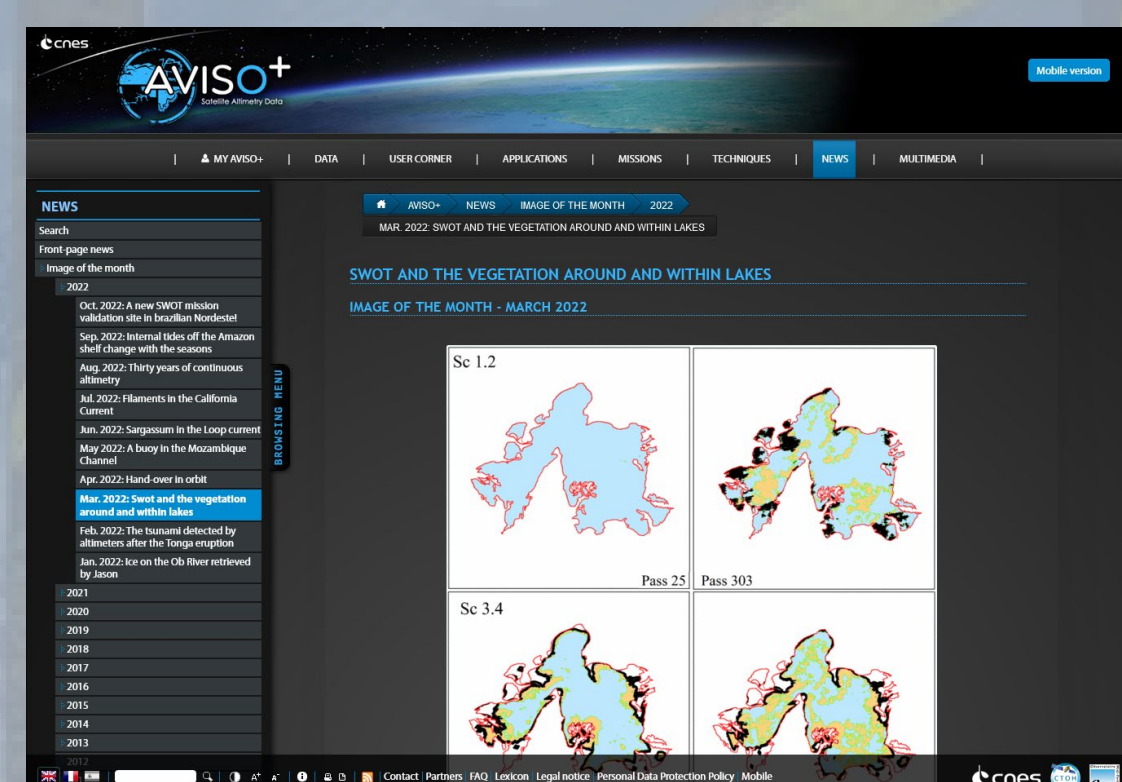
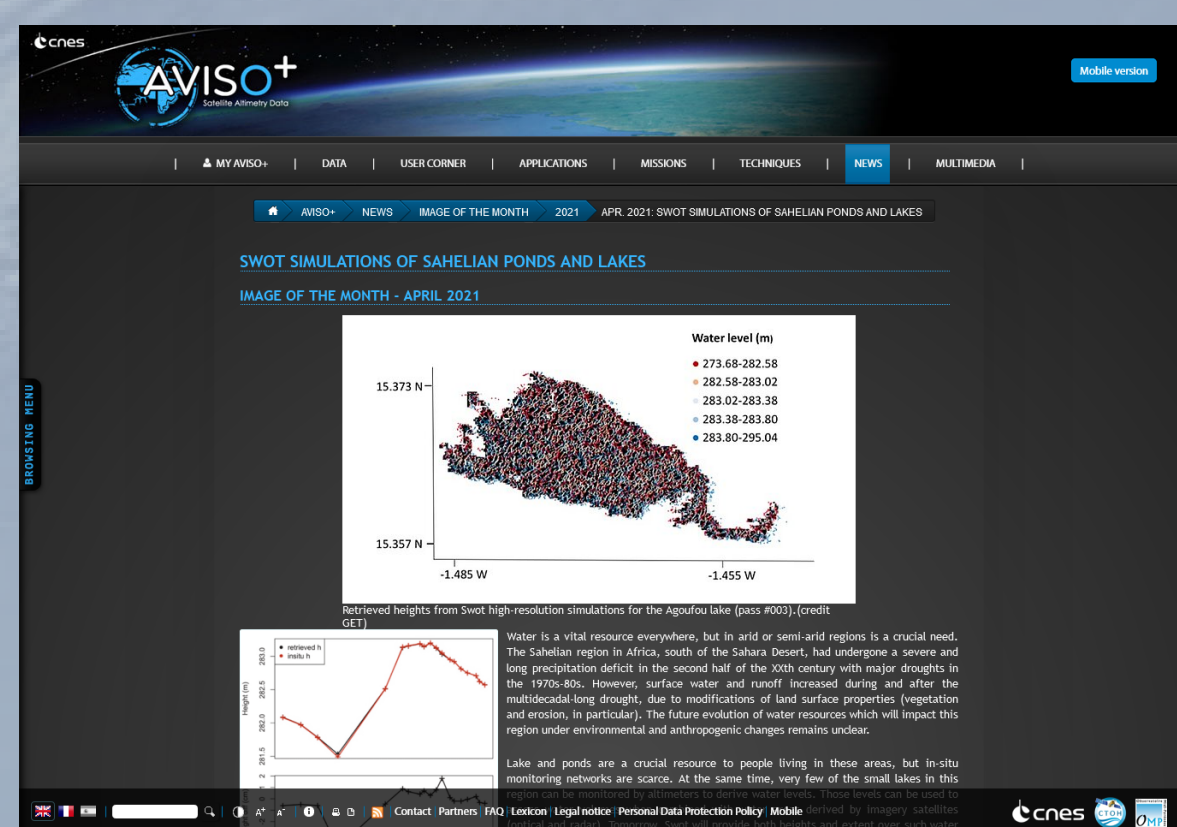
→ whole overview of Earth observation techniques which can be used for hydrology, complete with schemes & example outputs (also on Argonautica/ArgoHydro platform)

A series of ppt files, in French & English for scientists and engineers going into classrooms to explain, provided on Aviso+ web site.



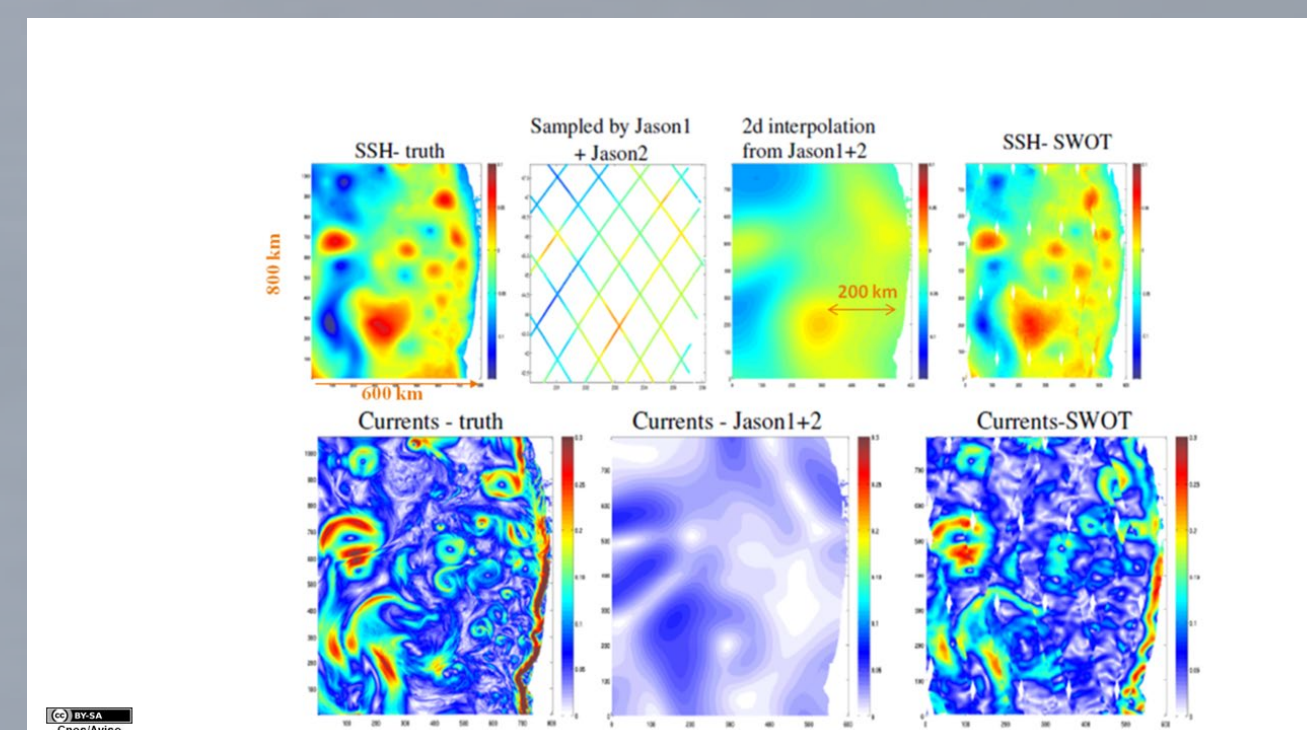
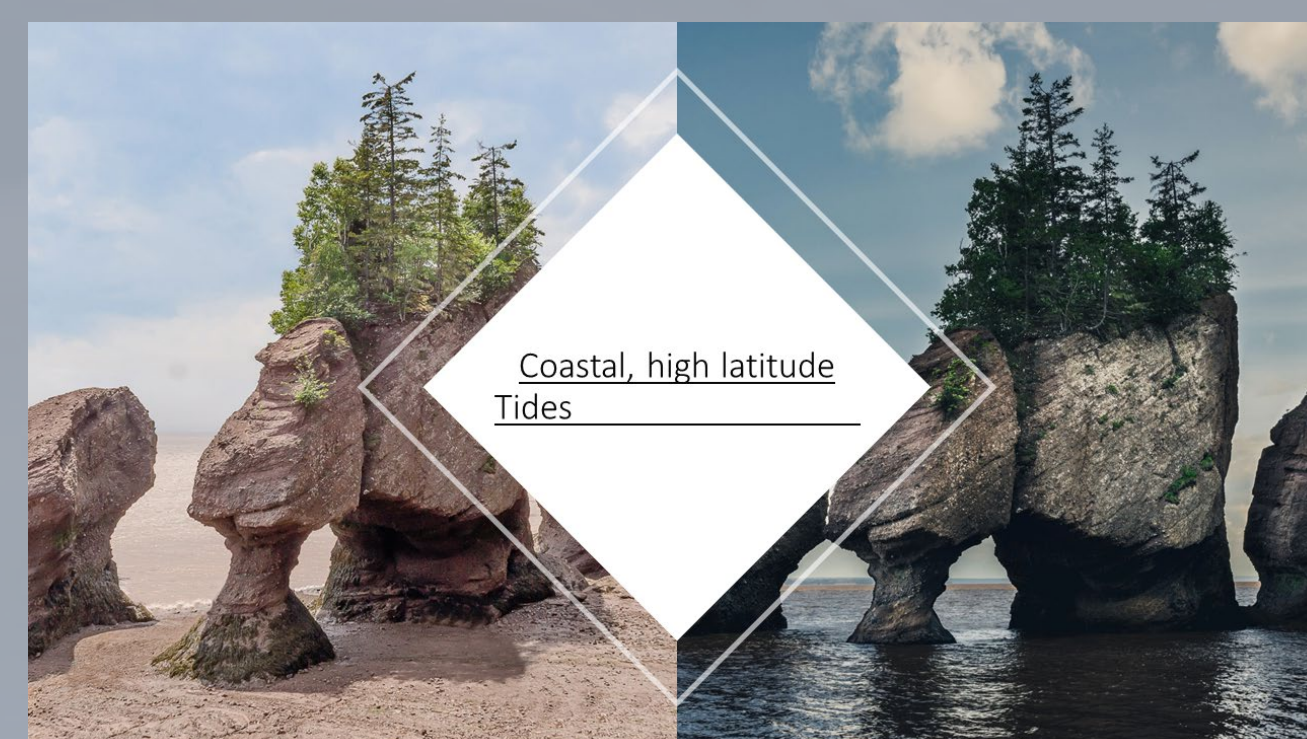
News & updates on the web

Aviso's "Images of the Month" for technical / scientific applications. Hydrology & ocean studies preparing for Swot.



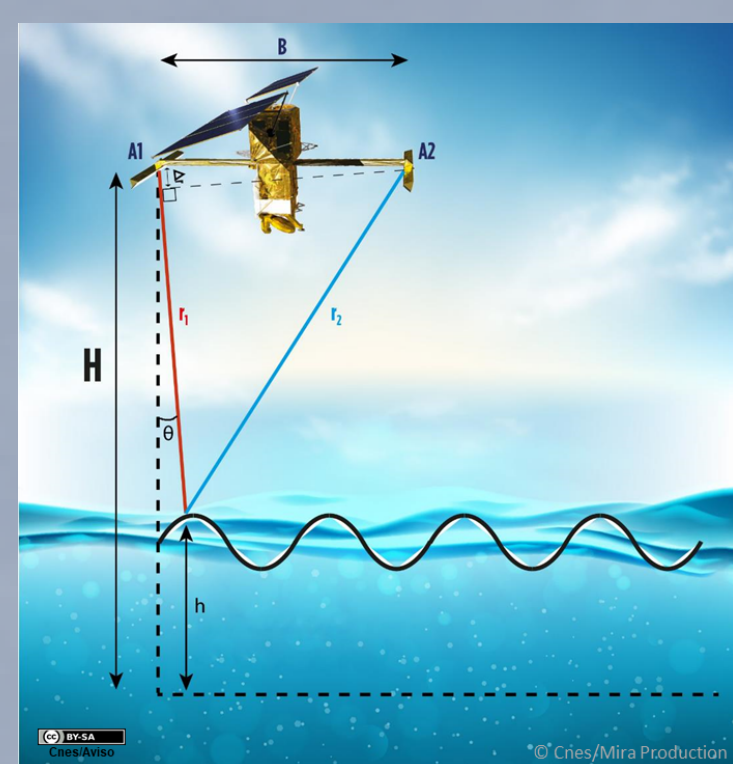
Swot for oceanography (2022)

Series of slides, complementing the pdf document explaining Swot for hydrology in English & French, to be published on Aviso web site end of 2022 (Swot being the aim of another ppt series, see following box)

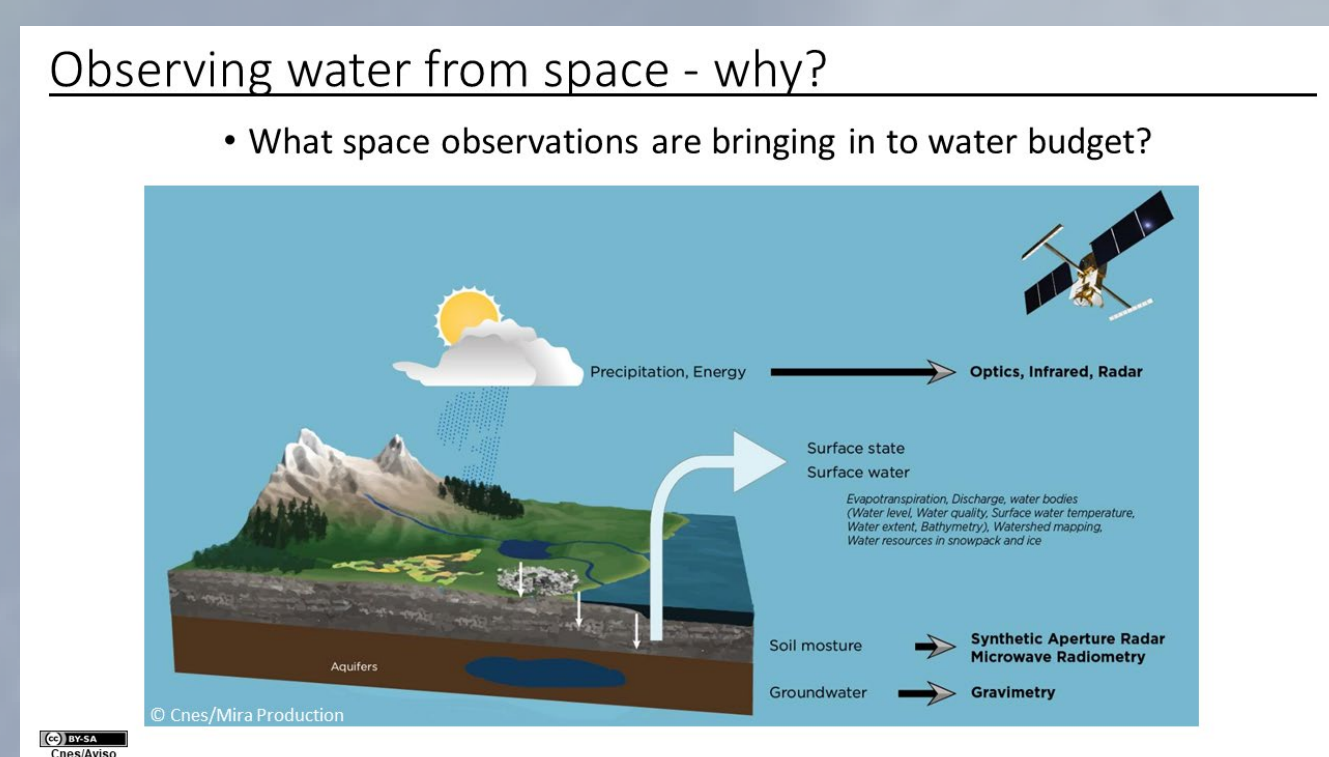


Swot/hydrology from space

A series of ppt files, in English and French, about Swot and Hydrology from space, aimed at university / engineering school / user level, provided on Aviso+ web site

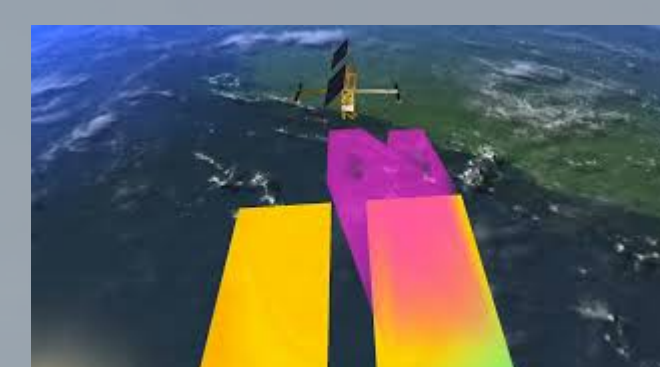
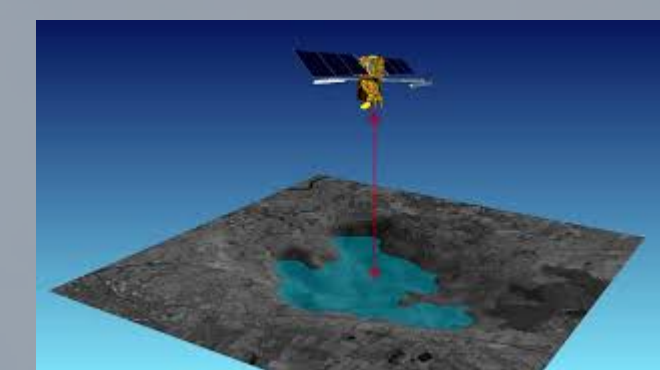
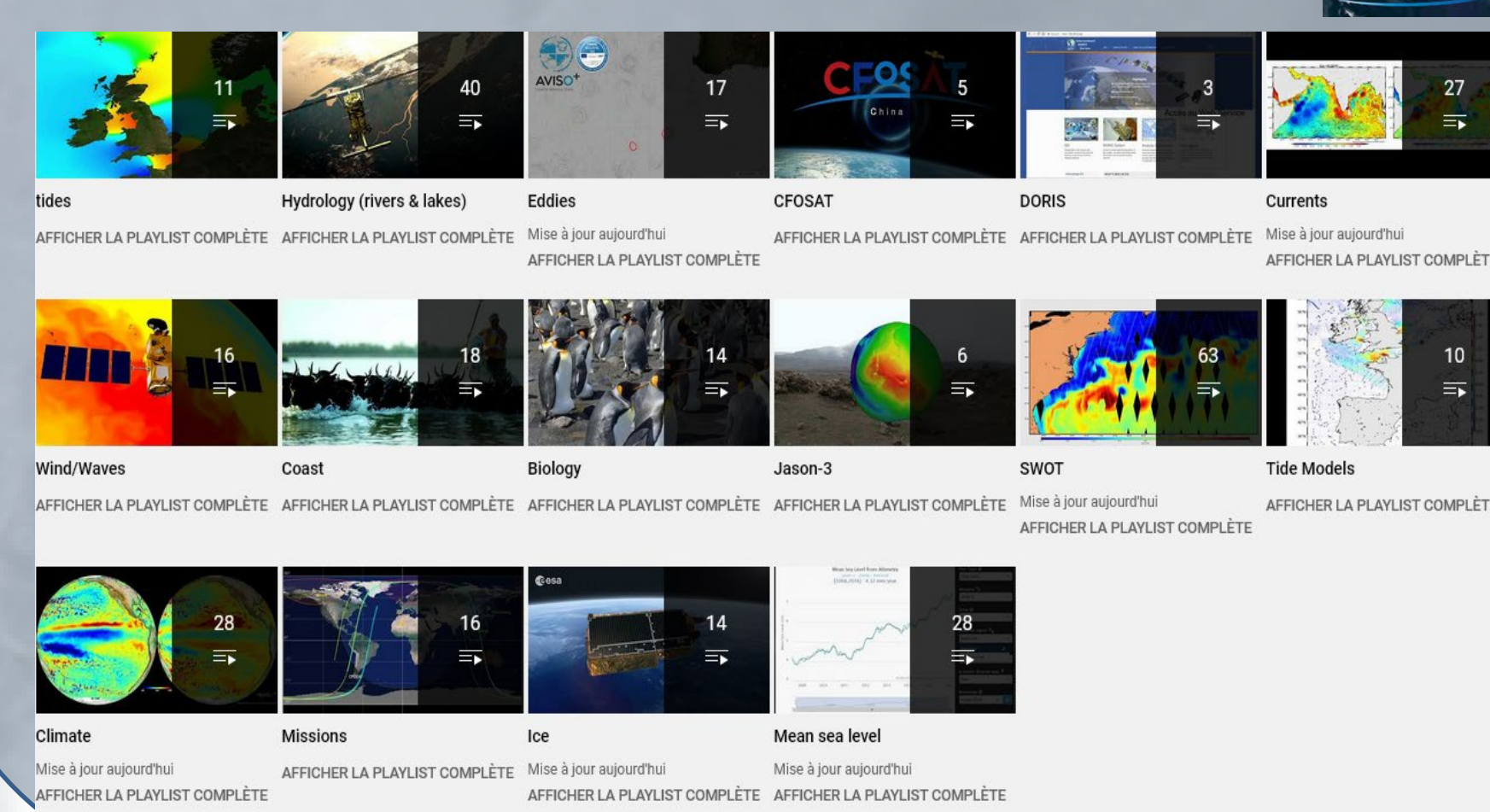
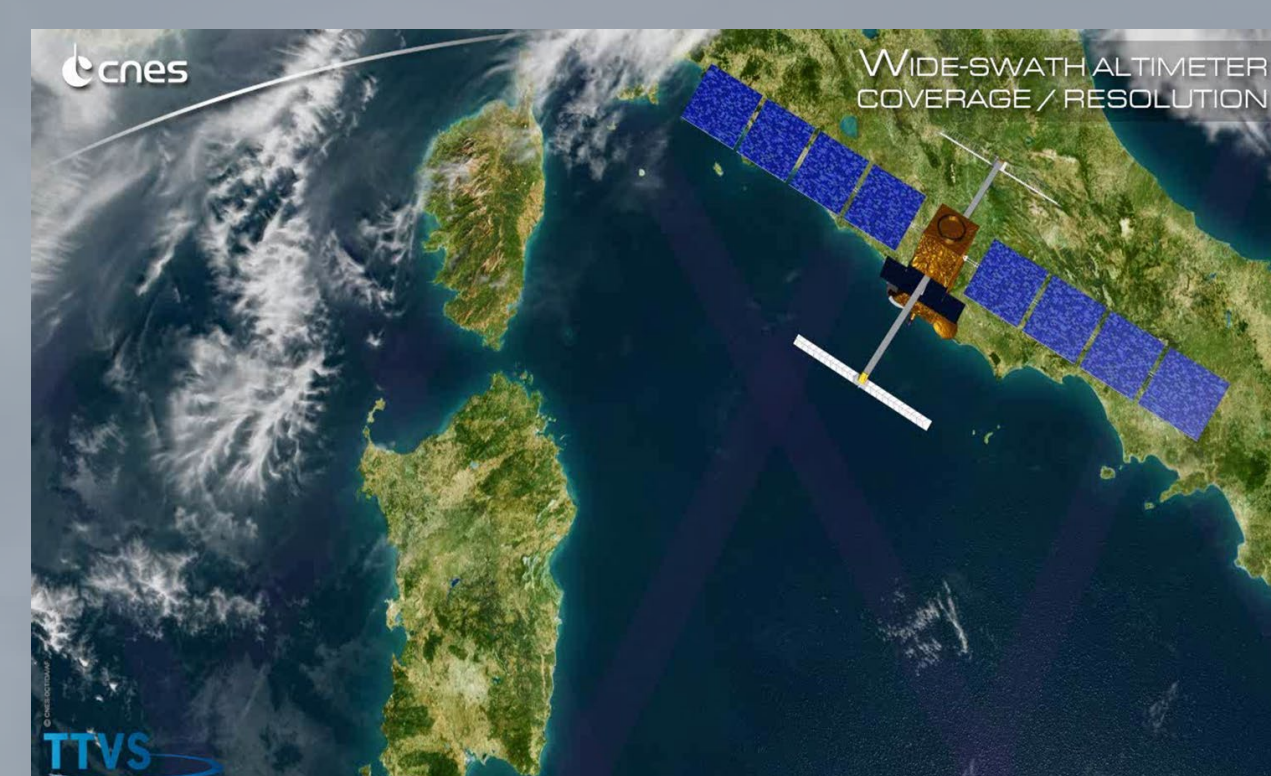


Swot measurement geometry
Both antenna will receive the same signal reflected on the surface, but it won't have travelled the same distance. This enable to compute the surface height.
 $r_1 - r_2$ is measured using the round-trip time between the satellite and the surface ($r_1 - r_2$ is also estimated).
 θ is deduced from $r_1 - r_2$ and B (distance between the two antennas).
 H (satellite altitude) is measured by precise location system onboard (Doris, GPS/GNSS).
The water height is $h = H - r_1 \cos(\theta)$



Swot movies & animations

A collection of short videos about Swot, products, and applications are available either on YouTube on in the Aviso Gallery



Find those resources on:

<https://www.aviso.altimetry.fr/en/multimedia/education/altimetry-courses.html>

<https://aviso.altimetry.fr/gallery/>

<https://www.youtube.com/channel/UCGsPb2oMuqQsc1xAl9O8xBA> (Aviso Channel)

