

# Radar data Choice and Order



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*Cédric Lardeux  
Jean-Paul Rudant  
Pierre-Louis Frison*

[cedric.lardeux@onfinternational.com](mailto:cedric.lardeux@onfinternational.com)

[rudant@univ-mlv.fr](mailto:rudant@univ-mlv.fr)

[frison@univ-mlv.fr](mailto:frison@univ-mlv.fr)

# OUTLINE

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**I. Important Sensor properties**

**II. Sensor review**

**III. Recommendation by activities**

**IV. How to order ?**



# Important sensor properties



- **Wavelength**  
*≈ penetration and roughness sensitivity*
- **Resolution**  
*≈ smallest discriminable object size*
- **Polarisation**  
*≈ structure sensitivity*
- **Archives or not ?**  
*≈ capability to have archives and to have new data*
- **Cost**



# Sensor review



<i>Name</i>	<i>Acquisition period</i>	<i>Band Frequency</i>	<i>Polarization mode</i>	<i>Spatial resolution (m)</i>	<i>Revisit time (days)</i>	<i>Scene cover (km)</i>
<b>ERS-1 / 2</b>	91 - 01	C	VV	30	35	185x185
<b>JERS</b>	92 - 98	L	HH	25	44	
<b>Radarsat</b>	95 - 05	C	HH	30	26	75 x 75
<b>ASAR</b>	02-12	C	1 or 2 pol. HH/HV/VV	25-500	16	60x60
<b>Radarsat-2</b>	2007 -	C	Polarimetric HH/HV/VV	1-15	5 to 10 ?	NA
<b>PALSAR</b>	07-11	L	Polarimetric HH/HV/VV	25	5 à 10 ?	100x100 max
<b>TerraSAR-X</b>	2007 -	X	Polarimetric HH/HV/VV	6,5	5?	77km de large
<b>Cosmo-Skymed</b>	2007 -	X	Partial: HH/HV/VV	0,6 à 2,4	1 à 3	15x15km
<b>SAOCOM</b>	2015	L		20	14	120km
<b>Sentinel 1</b>	2015-	C		10 à 60m	5	290km
<b>ALOS-2</b>	2015-	L	Polarimetric HH/HV/VV	3 to 100m	14	50-490km



# Recommandation – Forest Stratification



## I. Important properties

- *L band* (better forest/ No forest contrast)
- *HV and HH* polarization
- *Resolution* depending on study

## II. Sensor

- $\approx$  Palsar





## I. Important properties

- *Highest archive as possible*
- *HV and HH* polarization for better contrast  
Ground/Water
- *Resolution* depending on study

## II. Sensor

- *ERS*
- *ASAR*
- *Palsar*
- *Sentinel-1*



## I. Important properties

- *Highest archive as possible*
- *L band (better forest/ No forest contrast)*
- *HV and HH polarization*
- *Resolution (More important for Gold Mining)*

## II. Sensor

- *Sentinel-1 **if data available***  
*Even C band 12 day revisit like real-time deforestation check*
- *Palsar*



# How to order ?

- **ERS/ASAR:** Ask *ESA*
- **JERS:** Ask *JAXA*
- **RADARSAT 1/2:** ask *MDA*
- **TerraSar-X:** *AIRBUS*
- **Cosmoskymed:** *e-geos*
- **Sentinel-1 (free)**  
<https://scihub.esa.int/dhus/>
- **ALOS1/2**
  - ALOS 1 (36€ one scene): *RESTEC*
  - ALOS 2: *Alos-Pasco*

