



POLARIZATION IN EARTH OBSERVATION

Measurement and processing of polarimetric state of solar radiation returned to space by the earth's surface and atmosphere

Technological Advantages

Elements not visible in conventional imaging become visible (cables, vehicles, plant life, etc.).

The spectro-polarimetric signatures are accessible and provide new information such as the texture of grounds and objects, the maturity levels of leaves, the detection of pollutants on the ocean's surface, and the identification of camouflages

Elements not visible in conventional imaging become visible (sensitivity to nature of surfaces observed, to the orientation of these surfaces, to their granularity, reduction of dazzling phenomena via specularity, etc.).

Possible to acquire polarimetric information in separate spectral bands (the spectro-polarimetric signatures give access to subtle new information: plant maturity, detection of pollutants on the ocean's surface, fine identification of camouflages, etc.).

Can be used with push-broom and matrix image acquisition.

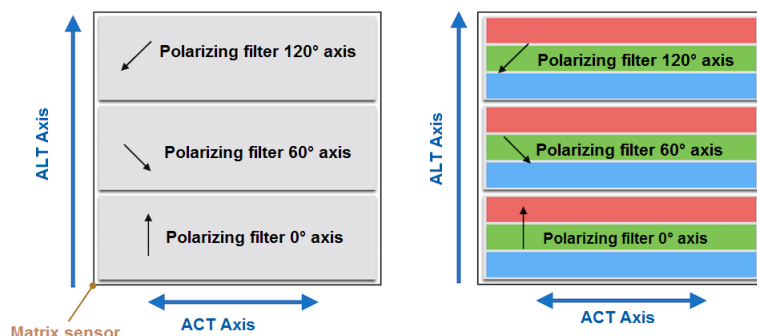


Image acquisition diagram with matrix sensor on non-stationary satellite (ALT axis): on left, monochrome acquisition, on right, multi-spectral acquisition

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Summary of the invention

Invention that increases the capacity of earth observation systems by adding the polarimetric dimension of light to the conventional spatial and spectral dimensions.

Invention solution based on an image sensor with at least two polarizing filters.

Potential Applications

Space

Non-space applications: Defence, Agriculture, Environment, Military

Commercial Advantages

Various sensor arrangements are available

Capacity to detect new signatures in space images that are not found in conventional multi-spectral imaging

Addition of a dimension to collect quantities of new information, in particular in high-resolution space imaging

*Patented invention, available under license
TRL : 3-4*