

Abstract**On-board optical observation instrument of variable spatial and spectral resolution**

The invention relates to an optical observation instrument intended to be installed on-board a satellite or an aircraft, said instrument comprising an optical system forming, of an overflown terrain, an image (I) on a photodetection matrix array (M) composed of pixels (P_{ij}) that are organized into rows (L_i) and into groups of columns (C_j). Each row of pixels corresponds to various points of the image, each point of a row corresponds to a given spectral band, and each group of columns corresponds to a different spectral band, the movement of the overflown terrain being perpendicular to the rows, the observation instrument comprising a device for acquiring data output from the pixels during a defined sampling period, the acquiring device operating in an acquisition mode defined by the common read-out of identical matrix-array blocks of pixels belonging to adjacent rows and adjacent columns, the numbers of rows and columns of the blocks being chosen depending on an expected spatial resolution and an expected spectral resolution, the observation instrument comprising at least two acquisition modes, a first acquisition mode in which the rows are read out in blocks of pixels and a second acquisition mode in which the columns are read out in blocks of pixels.

Figure for the abstract: Fig. 6