

DEMOSAICING POLARIZATION COLOR CAMERA IN THE FOURIER DOMAIN

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Polarimetric color cameras is a new technology that permits the polarization measurement of natural scenes. Our goal is to measure the polarization Stokes vector with several discrete wavelengths at the same time with the highest resolution. One problem that arises in the measuring scenario is that the filters in this technology overlaps in certain regions of the visible range, let us say that the green filter also partially transmits the red and blue channels and so on. For a proper measurement without the color cross talking, it is necessary the application of some kind of demosaicing algorithms [2]. In addition, to obtain the maximum resolution some kind of interpolation will be necessary [1].

In this presentation these two problems are studied by conducting a set of simulations and considering real values. As an example, we have simulated a beam with three colors (470, 554, 630 nm) and with different spatial linear polarization and degree of linear polarization distributions. In Figure 1 the azimuth distribution (radial configuration) in the red channel is shown. On the left one can appreciate the cross talking between the color channels, and in the right one without the cross talking.

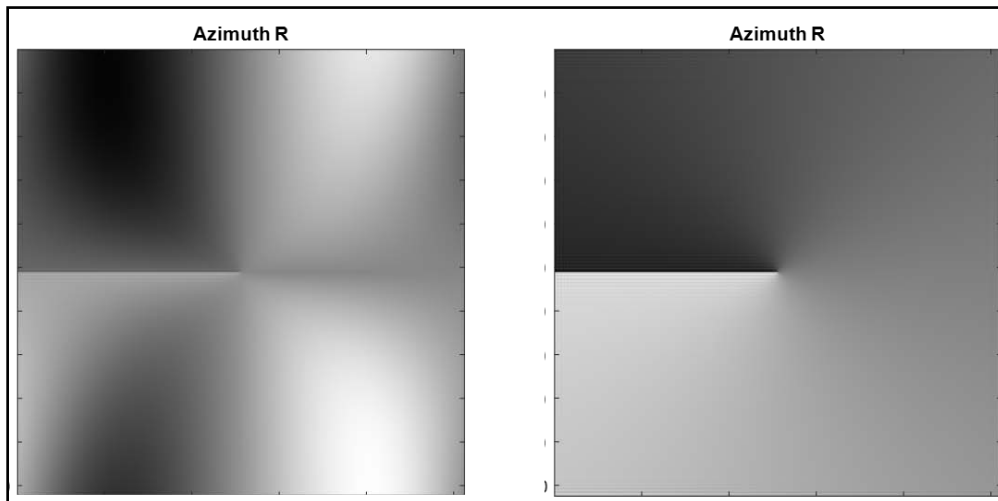


Fig. 1: Azimuth obtained in the red channel. (Left) with color cross talking. (Right) without color cross talking

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