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SILICON MODEL OF THE VISUAL SYSTEM FOR COLOR CONSTANCY

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Abstract

The human visual perception always is at the stake, if the illumination and the object reflectance are not proper. This is further crucial if the incident solid angle of illumination and reflectance from the object for perception are not proper. This paper discussed the preprocessing issues solid angles and surface spectral radiance to focus the scene. This has been discussed in two section, firstly the color chromaticity perceived by the silicon, to use the silicon for the visual system is analyzed. In which the absorption [13], penetration [16, 17, 18, 19, 20], quantum efficiency, generation of electrons into silicon by the photon are analyzed for its further application. Secondly the models for performance factor like solid angle, illumination and surface of the object for the color constancy are analyzed. However during this discussion the image sensors like CCD and CMOS also has been discussed.

Keywords : Color chromaticity, Color Constancy, Visual Systems, CCD imagers, CMOS imagers, Bayer Pattern, demosaicing.