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Image Coding

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Intellectual Image Coding

With respect to image coding, studies on photo transmission and facsimile transmission have been carried out. In the early days, it was treated as the field of imaging, but today it is independent of general image processing. H. Tominaga found that image communication and accumulation could be coded with the same principle, and then he carried out a lot of basic research and based on the findings proposed the boundary following code. The new concept of applying image processing to coding was proposed by H. Harashima, et al., and this was known as intellectual image coding.

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Picture Image Processing

The development of technologies to pick out information from pictures and images in addition to the compression coding transmission of telephone and television signals were partly carried out at IECE. In 1979, M. Takahashi, et al., developed a system to eliminate strains and noises with receiving high speed LANDSAT pictures and enabled the accumulation of satellite picture data. H. Enomoto uniformly carried out the geometric feature extraction of pictures from the perspective of differential geometrics and the established of a concept of feature extraction, and for the coding of pictures, he developed tilt conversion and multistep technologies. Y. Yasuda proposed a coding system for analog facsimile and a quasi grayscale view system and also proposed a hierarchical coding system which uniformly dealt with the transmission, accumulation and display of pictures, ahead of the rest of the world. T. Fukinuke invented a method to display TV signals in the three-dimensional domain and systematized the basic signal processing algorithm. M. Takagi carried out basic research on digital picture processing and promoted its application to medicine, global environment and industry. Y. Yamashita, et al., proposed a method to design optimal restoring filters for deteriorated pictures based on the picture space phase. For the processing method on the network, Y. Sakai carried out a study on collaborative work systems at plural points using pictures—a pioneering study on current QOS—and a study on the system to search picture information on the WWW.

LANDSAT: Land Satellite

DPCM: Differential Pulse Code Modulation