MOTION ANALYSIS FOR ADVANCED IMAGE COMMUNICATION SYSTEMS

KEYWORDS

MOTION ANALYSIS; MOTION COMPENSATION; IMAGE SEQUENCE CODING; IMAGE COMMUNICATION

ABSTRACT

This project aims to develop motion analysis methods for image communication systems. A large number of applications in image communication can benefit from the results of the research within this network, including digital TV, videophone, videoconferencing, and also publishing, medicine, computer-aided design, computer-aided manufacturing, computer graphics, remote expert consultation, and telerobotics.

The network is involved in four directions:

- advanced motion modelling, and analysis;
- representation of the relevant information;
- implementation of the processing;
- objective criteria for the quality of image communication.

In motion analysis researchers are investigating the following problems and methods: moving areas detection, 2D displacement field estimation and segmentation using markovian stochastic models, or mathematical morphology methods, or spatiotemporal Fourier analysis, and/or multiresolution analysis. Global motion, as well as stereoscopic motion, is also under study. Schemes of image prediction, filtering and interpolation using motion compensation form part of the research. The project is also interested in parallel implementation of motion analysis algorithms.

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