IMAGE COMPRESSION IN A MULTI−CAMERA SYSTEM BASED ON A DISTRIBUTED SOURCE CODING APPROACH (MonAmOR10)

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Abstract :

This paper illustrates an algorithm specifically designed for encoding multiple views of the same scene taken from calibrated cameras. The assumption here is that these views are strongly correlated as they represent the same content viewed from different perspectives. In order to keep the encoding complexity low, the proposed algorithm builds on PRISM (Power−efficient, Robust, hIgh compression, Syndrome−based Multimedia coding), a video coding framework based on distributed source coding principles. The encoder is constrained to perform a very cheap coarse 3D reconstruction of the scene, whereas the decoder has access to the best 3D reconstruction to be used as side information. Preliminary results on synthetic objects demonstrate that it is possible to achieve a coding efficiency gain with respect to INTRA coding at a low encoding complexity.

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