

Multiple description coding for stereoscopic 3D

ABSTRACT

In this paper, we propose an MDC schemes for stereoscopic 3D video. In the literature, MDC has previously been applied in 2D video but not so much in 3D video. The proposed algorithm enhances the error resilience of the 3D video using the combination of even and odd frame based MDC while retaining good temporal prediction efficiency for video over error-prone networks. Improvements are made to the original even and odd frame MDC scheme by adding a controllable amount of side information to improve frame interpolation at the decoder. The side information is also sent according to the video sequence motion for further improvement. The performance of the proposed algorithms is evaluated in error free and error prone environments especially for wireless channels. Simulation results show improved performance using the proposed MDC at high error rates compared to the single description coding (SDC) and the original even and odd frame MDC.

Keyword: 3D video; Multiple description video coding; Side information; Error resilience