Improving the visual quality of AVC/H.264 by combining it with content adaptive depth map compression

The future of video coding for 3DTV lies in the combination of depth maps and corresponding textures. Most current video coding standards, however, are only optimized for visual quality and are not able to efficiently compress depth maps. We present in this work a content adaptive depth map meshing with tritree and entropy encoding for 3D videos. We show that this approach outperforms the intra frame prediction of AVC/H.264 for the coding of depth maps of still images. We also demonstrate by combining AVC/H.264 with our algorithm that we are able to increase the visual quality of the encoded texture on average by 6 dB. This work is currently limited to still images but an extension to intra coding of 3D video is straightforward.