基于Delaunay三角形网格的彩色视频帧内编码方法

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摘要　利用DT(Delaunay Triangulation)网格研究了彩色视频亮度和色度分量之间的相关性，提出了一种基于DT网格的彩色视频帧内编码方案．该方案仅对亮度分量Y进行DT描述，利用亮度分量Y的部分网格节点经过相似变换生成色度分量Cb或Cr的DT网格，从而节约了编码时间．实验结果表明，与对3个分量分别进行DT描述及编码的方法相比，节约了约30%的编码时间，并保持了好的解码图像，仍然比H．263帧内编码和MPEG-4的静态纹理编码方法提供的主观质量好．

Intra-frame image coding scheme of color video based on the Delaunay triangulation mesh

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Abstract

The correlation between the luminance and chrominance components of color video is studied and a new intra-frame coding scheme of color video is proposed based on the DT(Delaunay Triangulation) mesh. In this scheme, the DT image representation is only made for the luminance component and parts mesh nodes of the luminance component Y are used to generate the mesh of chrominance components Cb and Cr via similar transformation. Simulation results show that the proposed method saves almost 30 percent in time while keeping the fine subjective quality for reconstructed image compared with the method by which the DT image representation is made for every component. Moreover, the new method can still provide the better objective quality compared with the intra frame coding method of H.263 and the still texture coding method of MPEG-4.

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