

论文

## 一种改进的可分级视频编码方法及其网络传输研究

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摘要

该文提出了一种改进的可分级视频编码方法。为了适应流媒体的分层传输要求,该方法通过对DCT系数量化残差的位平面编码产生视频流的增强层部分,其基本层码流由更多的子基本层组成,各子基本层通过宏块级DCT系数重排及VLC重组生成。同时,该文设计了一种针对该分层视频流数据的网络传输自适应不等重丢包保护(AUPLP)策略,在估计当前可利用带宽资源的基础上,实时调整不同层数据的保护力度,并控制传输截断的层数。仿真结果表明,与传统方法相比该文方案在低带宽时可获得平均1.2dB的编码增益,AUPLP的应用也大大改善了视频流媒体的传输质量。

关键词 [视频编码方法](#) [位置重排](#) [MPEG4-FGS](#) [PFGS](#) [AUPLP](#)

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## Research on an Improved Scalable Video Coding and the Network Transmission

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Abstract

An improved scalable video coding scheme is proposed in this paper. The method generates the base layer including some sub-base layers by DCT coefficients reordering and VLC reshuffling, and the residues between the original DCT coefficients and the reconstructed DCT coefficients of the base layer are encoded in the enhancement layer with bit-plane coding technology. To transmit the layered streaming video generated by the proposed scheme over the IP network, an Adaptive Unequal Packet Loss Protect (AUPLP) strategy is designed to determine the current available network bandwidth and adjust sending rates according to different situation. Experimental results show that the proposed scheme can improve the average coding efficiency up to 1.2dB compared with conventional methods in low bandwidth, and the AUPLP strategy can further improve the performances of video network transmission system.

Key words [Video coding scheme](#) [Data reordering](#) [MPEG4-FGS](#) [Progressive Fine Granularity Scalability \(PFGS\)](#) [Adaptive Unequal Packet Loss Protect \(AUPLP\)](#)

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