

基于不同等差错保护和动态子载波分配技术的图象传输系统性能研究

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摘要:

充分考虑小波变换后的图象码流、Turbo码以及多载波系统的特性, 提出了一种新颖的基于不同等差错保护和动态子载波分配技术的图象传输系统。对图象码流中重要性不同的信息比特, 进行不同码率的Turbo码, 并在不同信道状态的子载波上传输, 对于重要信息采用低码率Turbo编码, 并为其选择高信噪比的子载波进行传输。这种联合信源信道编码方案以及动态子载波分配技术能够有效的保护图象码流的重要信息, 提高了图象码流传输过程中的抗误码性能, 改善了静态图噪声信道中传输的效果。

关键词: Turbo码; 小波变换; 不同等差错保护; 动态子载波分配

An Novel Image Transmission System Based on Unequal Error Protection and Dynamical Sub-carrier Allocation Techniques

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Abstract:

Fully considering the characteristics of transformed image data stream, Turbo codes and multiple carriers system, we propose a novel image transmission system based on unequal error protection and dynamical sub-carriers allocation techniques. This system utilizes unequal error protection (UEP) and dynamical subchannel allocation techniques to transmit different part of image data streams. For the critical part, we encode them with low rate Turbo code and choose high SNR sub-carriers to transmit them. Simulation results prove that this proposed schema can effectively protect the important image stream and improve the image transmission performance over the noisy channel.

Keywords: Turbo code; wavelet transformation; unequal error protection; dynamical subchannel allocation

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