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Editor(s): Said, A; Guleryuz, OG

Title: Compression Efficiency Analysis of Wyner-Ziv Video Coding with Motion Compensated Side Information Interpolation

Source: VISUAL INFORMATION PROCESSING AND COMMUNICATION, 7543: Art. No. 75430D 2010

Book series title: Proceedings of SPIE-The International Society for Optical Engineering

Language: English

Document Type: Proceedings Paper

Conference Title: Conference on Visual Information Processing and Communication

Conference Date: JAN 19-21, 2010

Conference Location: San Jose, CA

Conference Sponsors: IS & T (Soc Imaging Sci & Technol).; SPIE.

Author Keywords: Wyner-Ziv video coding; side information; motion compensated frame interpolation

KeyWords Plus: PREDICTION

Abstract: The Wyner-Ziv video coding (WZVC) rate distortion performance is highly dependent on the quality of the side information, an estimation of the original frame, created at the decoder. This paper, characterizes the WZVC efficiency when motion compensated frame interpolation (MCFI) techniques are used to generate the side information, a difficult problem in WZVC especially because the decoder only has available some reference decoded frames. The proposed WZVC compression efficiency rate model relates the power spectral of the estimation error to the accuracy of the MCFI motion field. Then, some interesting conclusions may be derived related to the impact of the motion field smoothness and the correlation to the true motion trajectories on the compression performance.

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Publisher: SPIE-INT SOC OPTICAL ENGINEERING

Publisher Address: 1000 20TH ST, PO BOX 10, BELLINGHAM, WA 98227-0010 USA

ISSN: 0277-786X

ISBN: 978-0-8194-7936-5

Article Number: 75430D

DOI: 10.1117/12.840544

ISI Document Delivery No.: BRR40