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Monte Carlo Simulation for Next Generation Source and Channel Coding on OSG Connect

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Lossy source coding is an efficient data compression technique that aims to minimize the distortion in the reconstructed sequence. Our research involves the investigation of the distortion performance of state-of-the art protograph-based SC-LDGM codes. We show that performance close to Shannon's optimal rate-distortion limits can be achieved with an efficient windowed encoding (WE) algorithm that takes advantage of the convolutional structure of the SC-LDGM codes. The idea is numerically verified by running extensive and highly parallelizable Monte Carlo simulation using distributed high throughput computing, OSG connect

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