

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Fixed and Broadcast Communications (5)

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SENSING SATELLITE DATA TRANSMISSION**Abstract**

According to the actual compressing and transmitting effect of high-resolution remote sensing satellites, nonbinary low-density parity-check codes was proposed for high-resolution remote sensing satellite data transmission. In this paper, a new kind of NB-LDPC code with short and medium block lengths was proposed and compared with 7/8 binary LDPC codes in CCSDS under different channel conditions. The parity check matrix was constructed based on the modified progressive edge growth algorithm, the nonzero elements are defined by avoiding the definition of subcode, thus the code have a good minimum distance property. The simulation results show that the proposed NB-LDPC code can effectively improve the bit error rate of high resolution remote sensing data transmission than that of binary LDPC with equal code length and code rate in AWGN or burst error channels. Also, NB-LDPC is closely integrated with coded modulation and more robust to burst noise, may be used as one of the future high resolution satellite remote sensing data transmission channel coding schemes.