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| **Abstract:** |  |
| Abstract— Performance of Turbo code depends critically on the efficient design of interleaver. This paper describes the improvement of interleaver design based on the distance spectrum of the code and presents distance spectrum of Turbo codes with some mostly used interleavers and analyzes the impact of weight-2, 3, 4 and 5 input sequences on the code words. Considering all these low weight inputs, a constraint set is developed, and this constraint set is suggested to be used with the random interleaving algorithm. This improved algorithm can eliminate or decrease the low free distance of code words. Impact of frame size, number of shift registers of the encoder, code rate and number of decoding iteration on interleaver gain is shown. Increased complexity for this improvement is also shown in terms of simulation time. | |