Trellis Termination

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1 Turbo Codes using linear interleavers

mapping function for linear interleaver

$$\Pi_L = Di \mod N, \ 0 \le i \le N-1, \ gcd(N, D) = 1$$

focus on weight-2 inputs. let the distance between the "1" bits be t. For a block size N range of t is

$$1 \le t \le N - 1$$

. After interleaving the position of the "1" bits are changed. Let the distance between the "1" bits of the interleaved sequence be s.

Using the linear interleaver, we assume that an input with the "1" bits seperated by distance t will always be interleaved to sequence with the "1" bits seperated by distance s. However this holds true only when the first bit position is 1. When the first bit position is greater than one a distance of t is interleaved to a distance of s or $-s \mod N$ depending on the position of the "1" bits.