

ELEC-E7240 Coding Methods, Pre-assignment B2

[Old exam problem]

In a convolutional code, the encoder behaves according to the following table in going from state i to state j (state 0 is the designated initial and final state, and a/bb means that input a generates output bb):

Old state i	New state j			
	0	1	2	3
0	0/00	impossible	impossible	1/10
1	impossible	1/10	0/00	impossible
2	0/01	impossible	impossible	1/11
3	impossible	1/11	0/01	impossible

Construct a trellis diagram and use hard-decision Viterbi decoding to find the transmitted sequence when the following sequence is received after transmission across a binary symmetric channel (BSC):

00 11 01 11 10 01 01