

### BIT ERROR RATE (BER)/BIT ERROR PROBABILITY (P<sub>b</sub>) PLOT VISUALIZATION

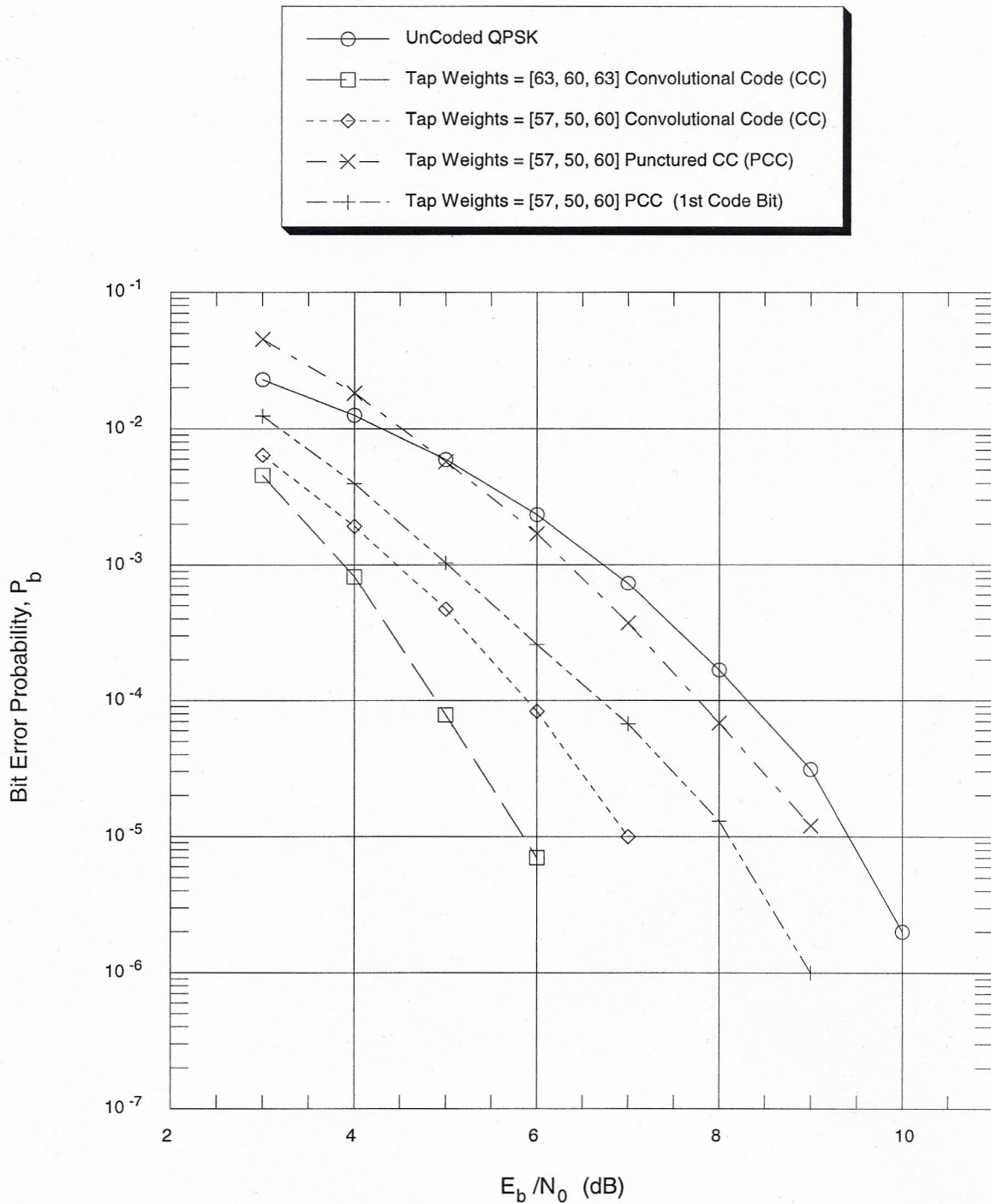


Figure 1. Bit Error Probability for UnCoded (UC) QPSK, Convolutional Coded (CC) QPSK, and Punctured Convolutional Coded (PCC) M-ary Signaling over a Coherent Memoryless Channel with Additive White Gaussian Noise (AWGN): Parent Code Rate = 1/6, K = 3 (57, 50, 60) a Non-Recursive Convolutional Code and Viterbi Algorithm Decoder using a Path Memory Length of 36 bits and an Unquantized Branch Metric; Rate = 1/3 Punctured Codes derived from this 1/6 rate parent code for Puncturing P = 8 using the following P Matrices (2nd P Matrix is created using the branch First Code Bit Deletion process):  
 [[1,1,1,1,1,1,1,1],[1,1,1,1,1,1,1,1],[0,0,1,0,1,0,1,0],[0,0,1,0,1,0,1,0],[0,0,0,0,1,0,0,0],[0,0,0,0,1,0,0,0]];  
 [[1,0,0,0,1,0,0,0],[1,1,1,1,1,1,1,1],[0,1,1,1,1,1,1,1],[0,0,1,0,1,0,1,0],[0,0,1,0,1,0,1,0],[0,0,0,0,1,0,0,0]];  
 M-ary Schemes: UC & CC Gray Coded (GC) QPSK; PCC: {GC QPSK, GC QPSK, GC Non-Rect 16-QAM, GC QPSK, GC Non-Rect 64-QAM, GC QPSK, GC Non-Rect 16-QAM, GC QPSK}.