Simulation conditions (intentionally was optimized for PBM):

* very high launch power: >10 dBm;
* link distance: 640 km;
* no AWGN noise;
* modulation: 16QAM with default Gray mapping;
* constellation shaping: probabilistic for entropy 3.67 bit/symbol;
* 2 polarizations

All data vectors has such format:

* first dimension (number of row) –number of sample;
* second dimension (number of column) – polarization (X or Y).

Description of variables in the file:

* srcSymData: matrix with source QAM symbols on TX side (desired symbols for PBM model);
* srcPermBitData: matrix with source bits (on TX side);
* eqSymOutData: matrix with received samples on RX side (input samples of PBM model)

PBM model:



Reference values of NMSE, SER, BER and MI for PBM model, calculated with least squares method:

* before PBM: NMSE: -12.842 dB, SER: 3.143e-02, BER: 7.157e-03, MI: 3.5490 bit/sym;
* after PBM (M = 5): NMSE: -13.283655 dB, SER: 2.023201e-02, BER: 5.111600e-03, MI: 3.5834234016 bit/sym;
* after PBM (M = 10): NMSE: -13.564240 dB, SER: 1.590554e-02, BER: 4.011635e-03, MI: 3.6012967803 bit/sym;
* after PBM (M = 20): NMSE: -14.064768 dB, SER: 1.031011e-02, BER: 2.590566e-03, MI: 3.6248092647 bit/sym.

!!! IMPORTANT: because of boundary effects, it is recommended don’t use about 100 symbols (400 bits) in the begin and in the end of data block for calculation of PBM coefficients and NMSE/SER/BER/MI.