an Additive White Gaussian Noise (AWGN) channel. The simulation scenarios are generated by using different combinations of parameters given in Table II.

Figure 2 shows the detected change points by the algebraic technique where: the blue signal is the simulated OFDM signal and the green stars are the detected change points.

![Change point detection with SNR=-8dB.](image)

Fig. 2. Change point detection with SNR=-8dB.

Fig. 3 reports the comparison in terms of Probability of Detection Vs. SNR between the Energy Detector (ED) and the three first Algebraic Detectors: (AD₁) (AD₂) and (AD₃), for \( P_F = 0.05 \) and SNR ranging in -40 to 0 dBs.

The threshold level for each detector is computed with function of the probability of false alarm \( P_F \).