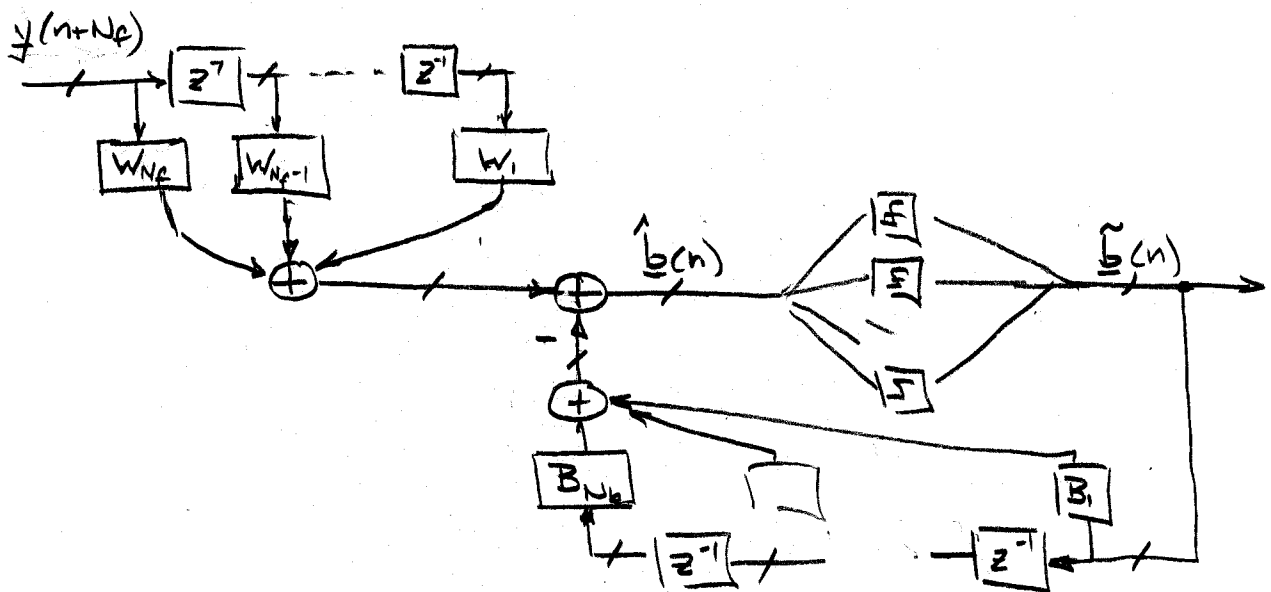


## 5.2 The MMSE DFE

5.2.1

- From Section 5.1, it is clear that we must eliminate MAI from the future, too, in order to eliminate the floor.
- One approach is the classic DFE, with a linear forward section and a decision feedback section.



Matrix coefficients are  $K \times K$

- Forward section suppresses interference from future, present, either ZF or MMSE style.

- Hope that forward section does not enhance noise too much.

- Very few published results

[Tide 95], [Tide 99]

for analysis, design equations

[Tide 95]  $N_c=31, K=2$   
20 dB disparity, average BER

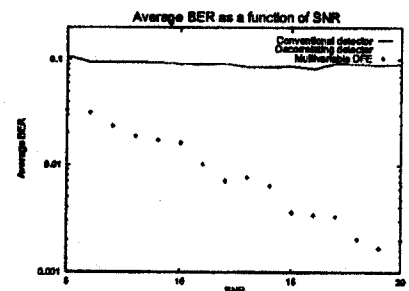


Figure 6 The multivariable DFE used as a CDMA detector (diamonds), compared to the conventional detector (solid) and the decorrelating detector (dashed).