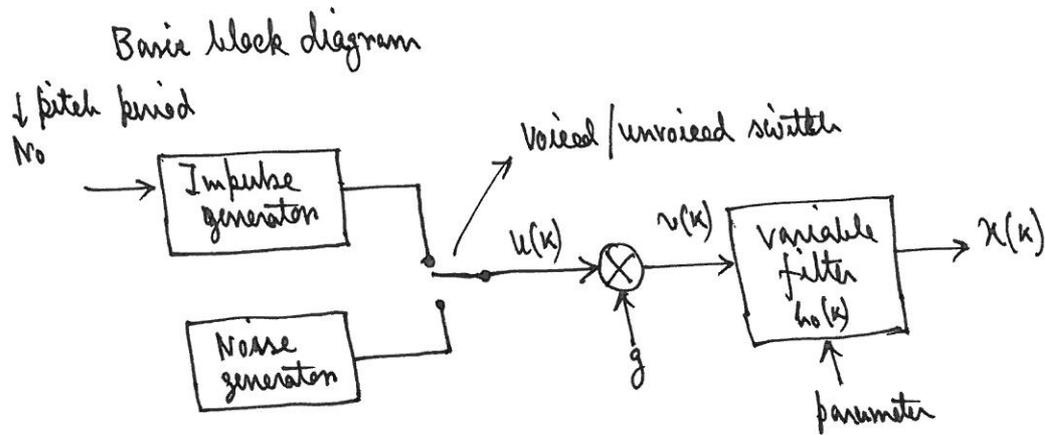


Parametric Coding

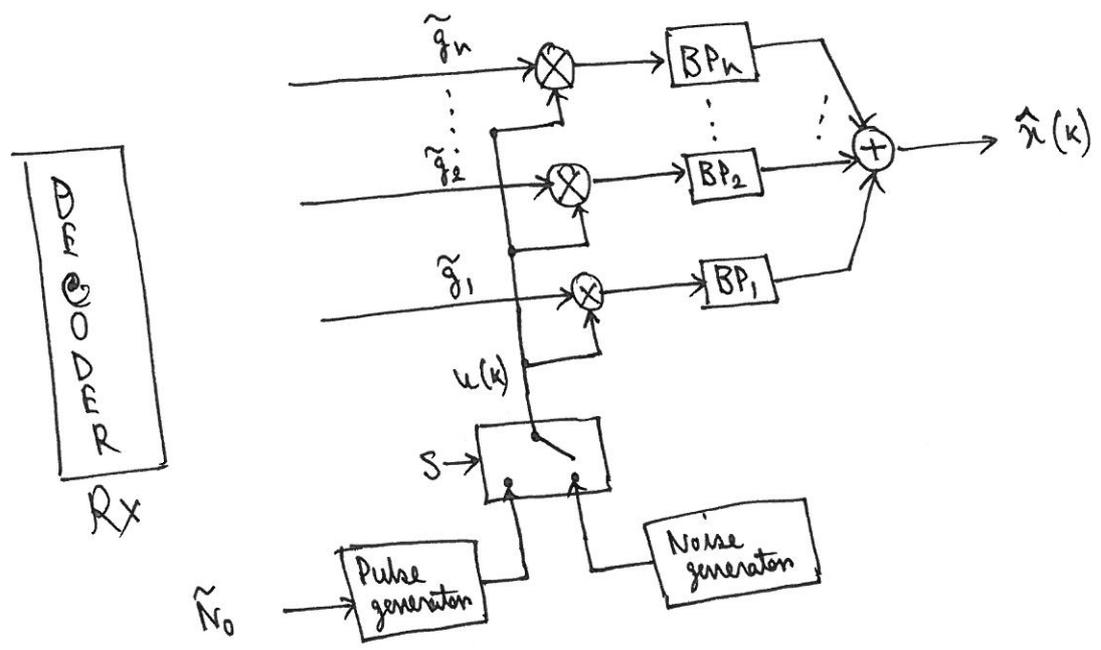
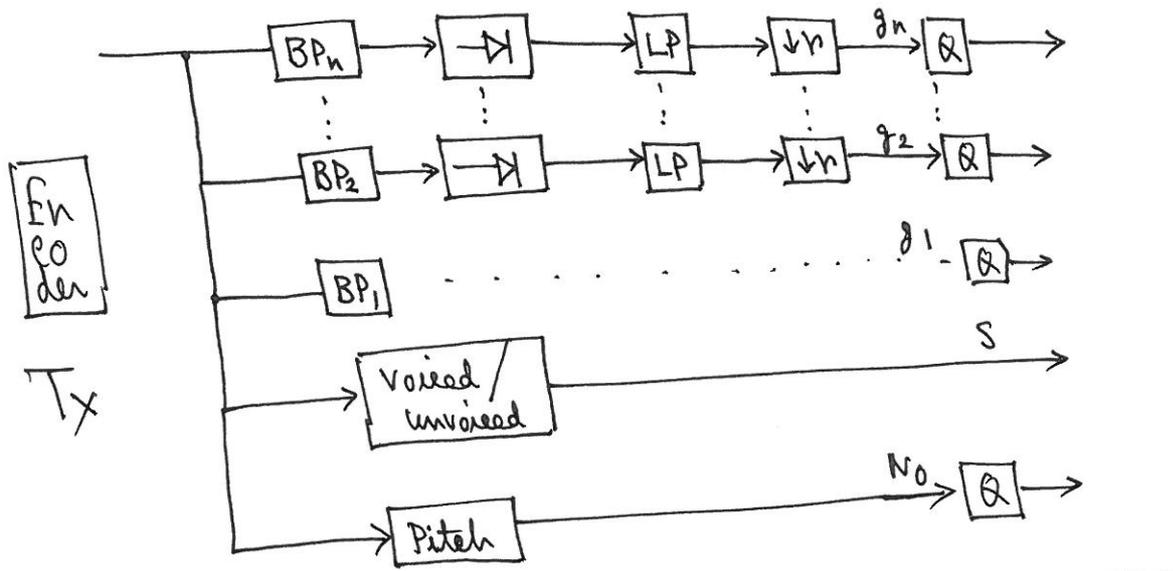
Vaerden

- parametric coders
- lowest bit rate coders (0.1-0.5 bits/sample)
- Only considers the effect of perceived speech quality.
- Phase is forgotten (not-considered)
- So, signal-to-noise ratio is not all ~~at~~ a good performance measure.
- Speech quality is synthetic.



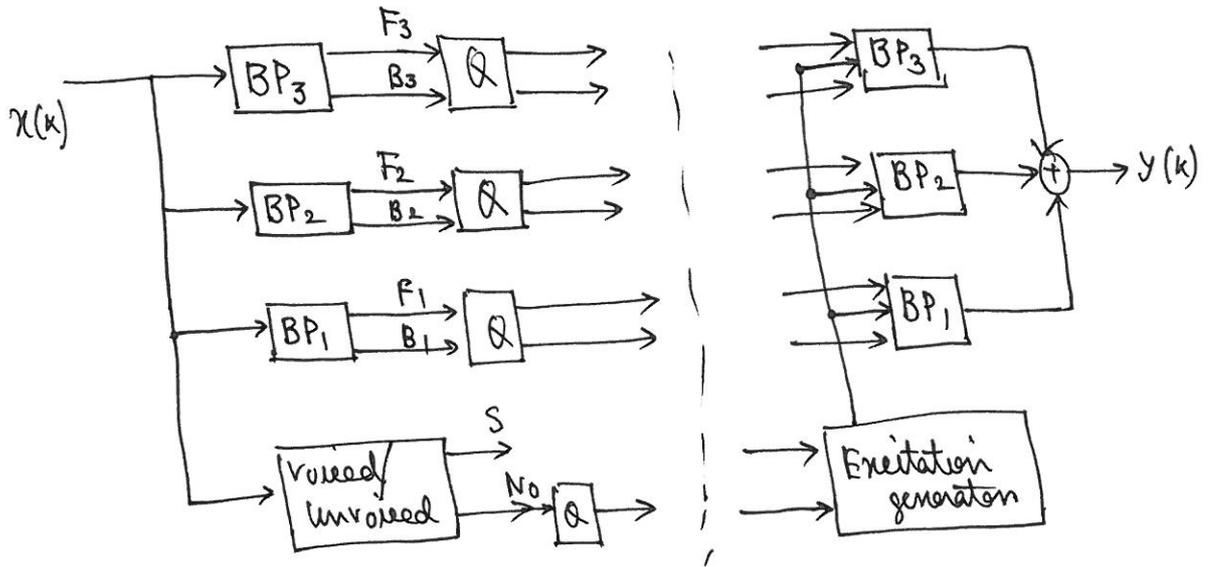
Channel Vocoder

(2)



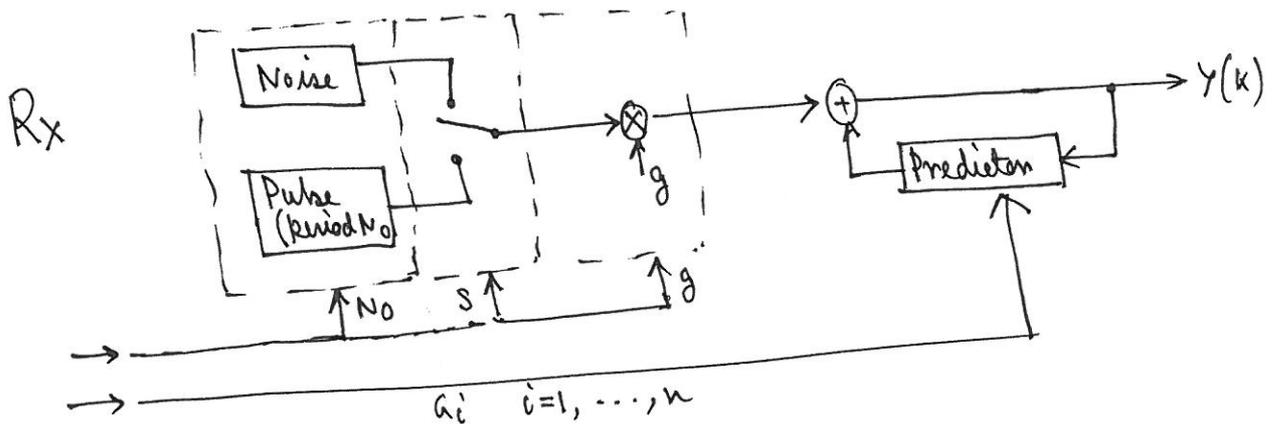
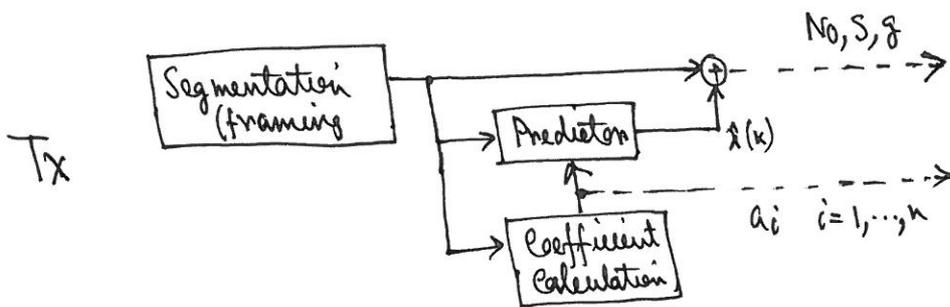
Formant vocoder (1971)

③



Other vocoders are also there, such as cepstrum vocoder (2000).

LPE Vocoder (Most famous)



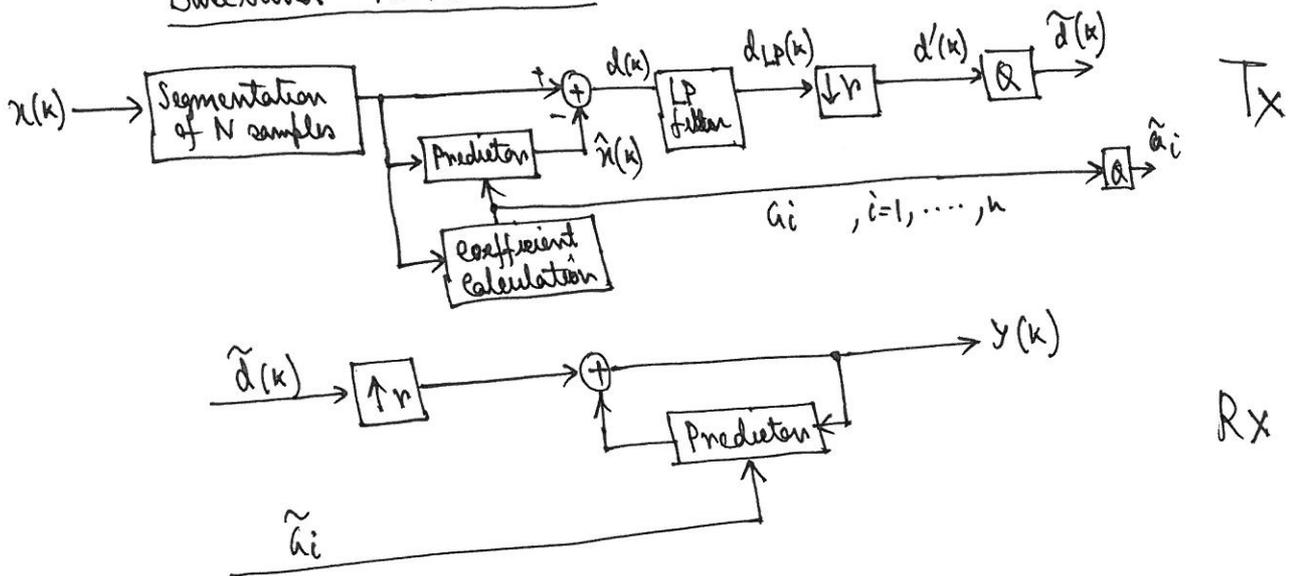
Hybrid coding

- Coefficients of LP synthesis filter are transmitted as side information (coded)
- Residual signal is approximated (coded)

Quantization of residual signal: (a) Scalar Q
(b) Vector Q

Residual Signal Coding: RLP

Baseband-RLP coder



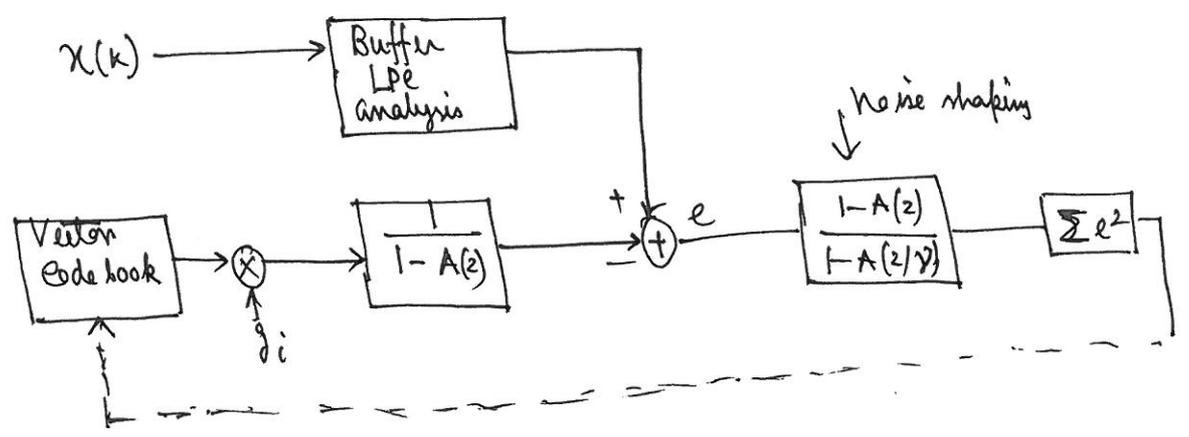
Assumption: The lowest speech frequencies carry the highest perceptually important information.

Technique: So, a baseband of the residual signal is extracted by a low pass filter.

GSM Full-Rate coder: Uses this RLP concept.
(See Figure 8.27 of reference book)

Analysis-by-synthesis : CELP

Basic structure



- choose the code for residual signal vector that is best matched with noise shaping, that means perceptually most important.