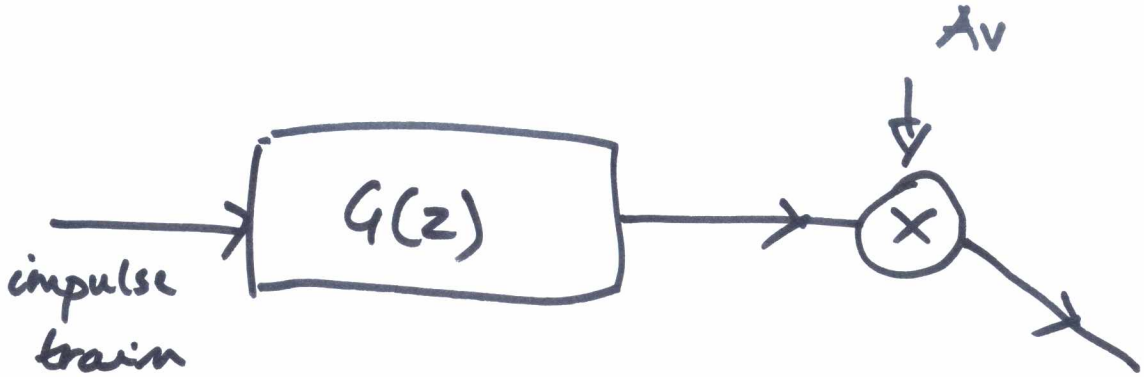
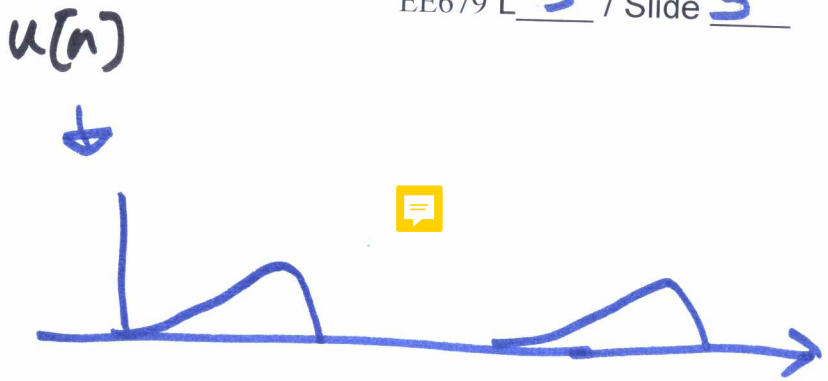
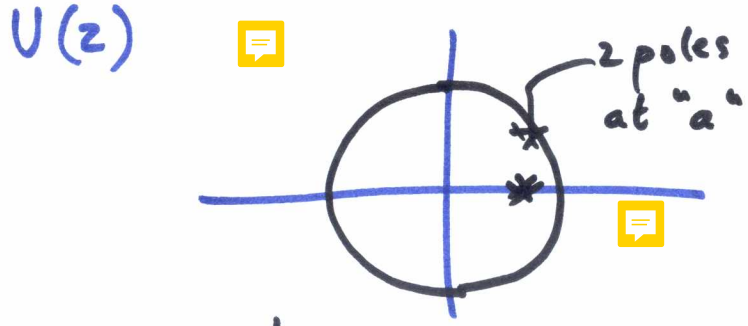
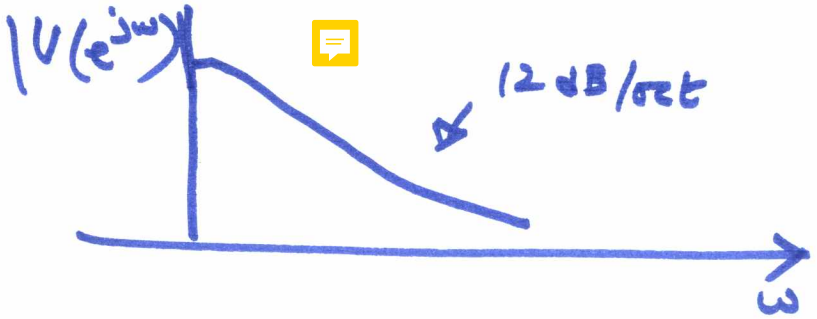






$$U(z) = \frac{1}{(1-az^{-1})^2}$$



Vowels :

Cascade model is good

↓

of 2nd-order resonators

(F_i, B_i)

e.g. अ, ∧

5 formants

/

500 Hz, 1500, 2500, 3500, 4500

F_1 F_2 F_3

$$V(z) = \prod_{k=1}^{5} \frac{b_{0k}}{1 - a_{1k} z^{-1} - a_{2k} z^{-2}}$$

, $a_{1k}, a_{2k} \sim F_k, B_k$

F1 : 180 - 750 Hz

F2 : 600 - 2300 Hz

F3 : 1300 - 3100 Hz.