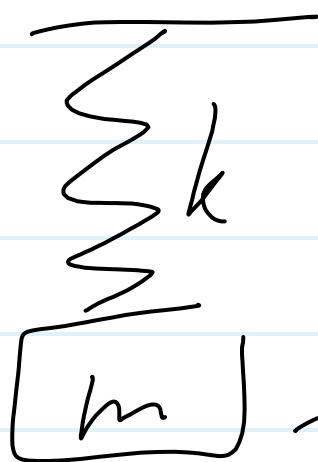
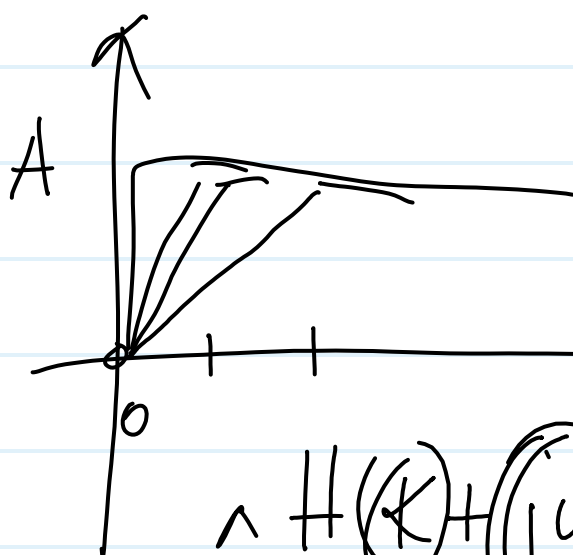


AKUSTYKA

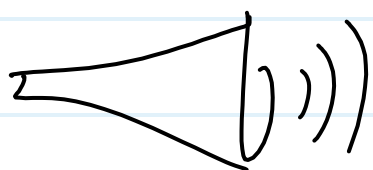
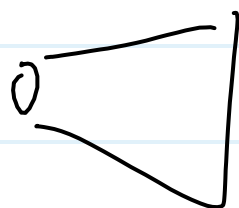
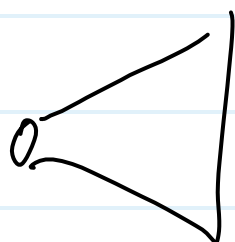
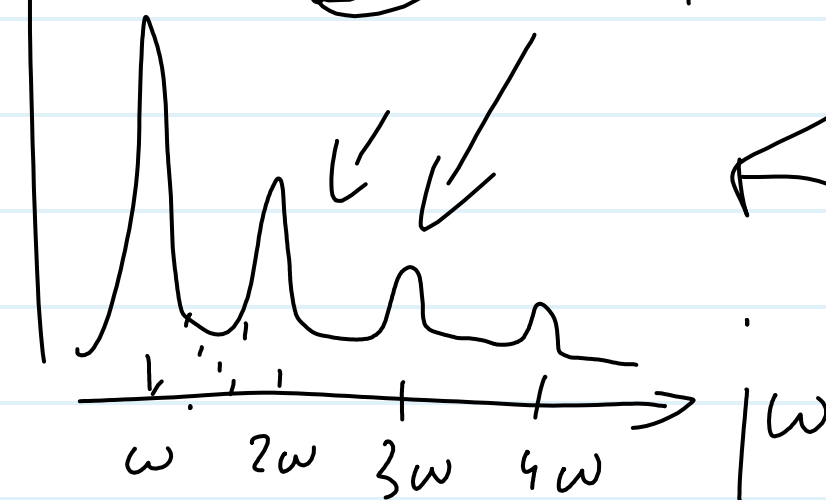
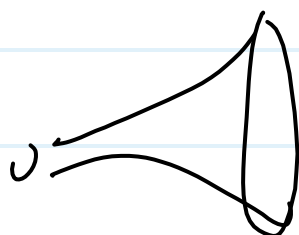
MODELOWANIE FIZYCZNE



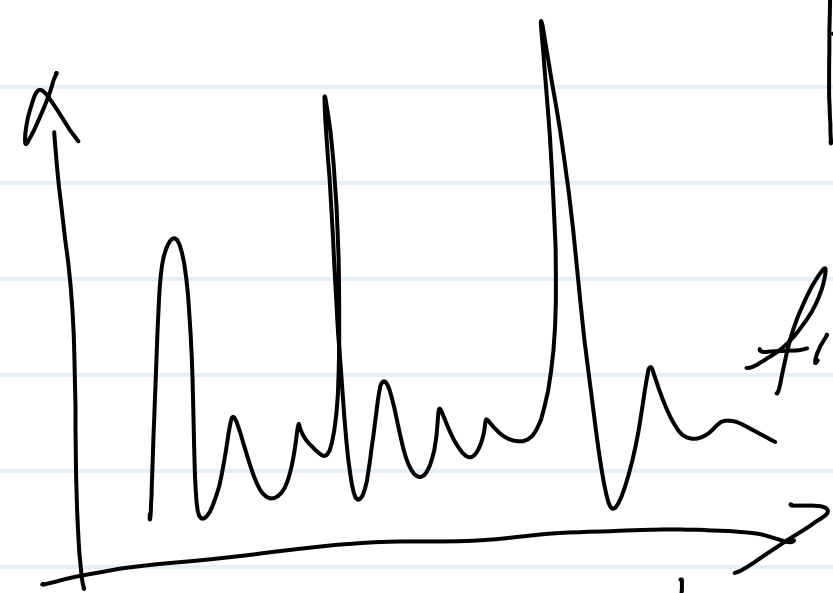
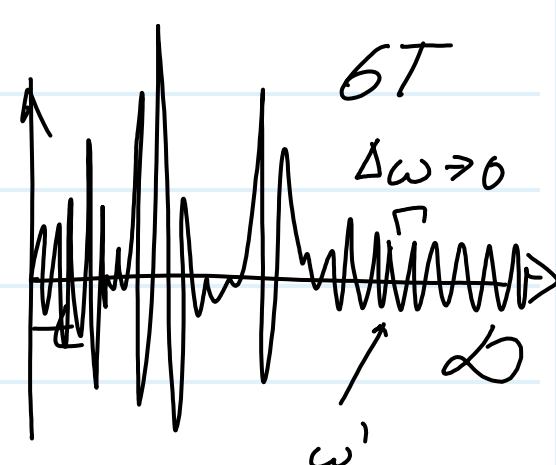
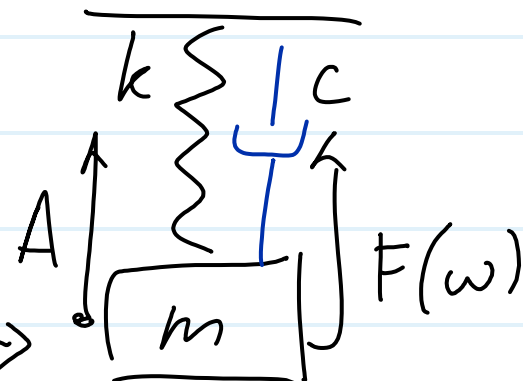
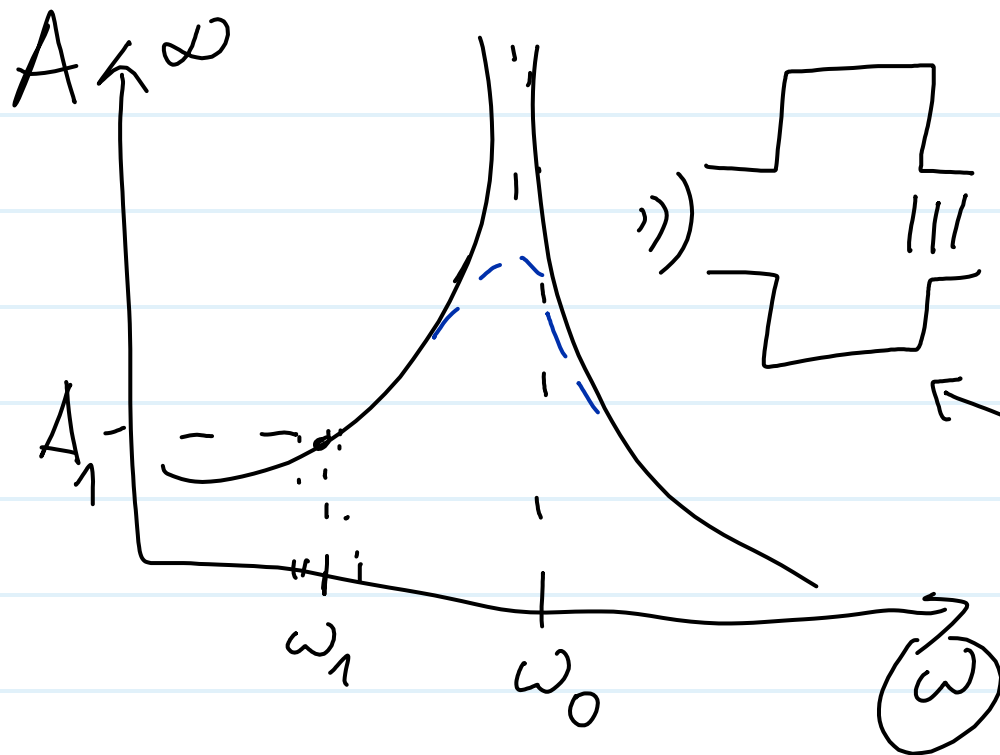
$$F = A \sin(\omega t)$$



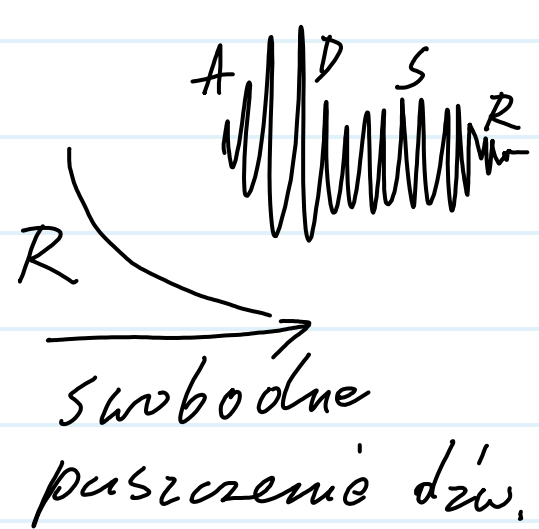
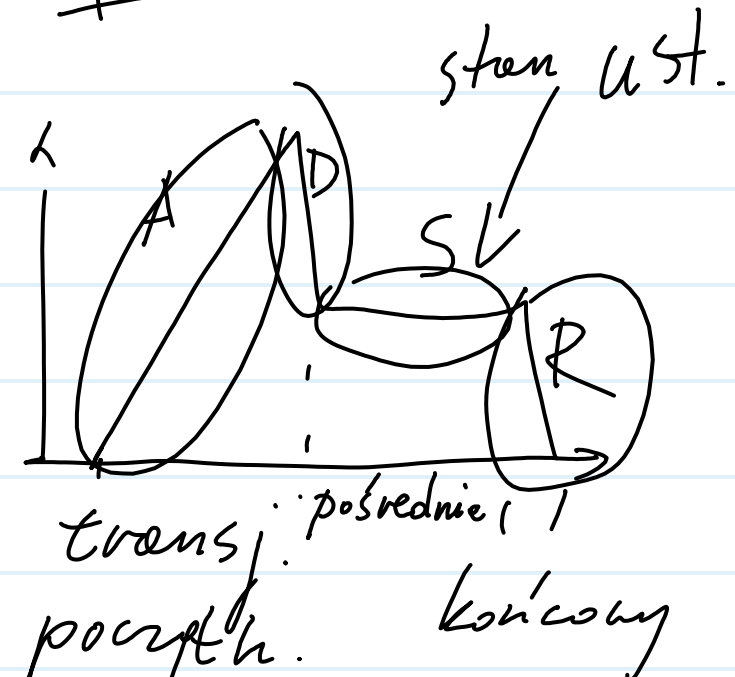
$$H(s) = \frac{1}{s^2 + 2\zeta\omega_n s + \omega_n^2}$$

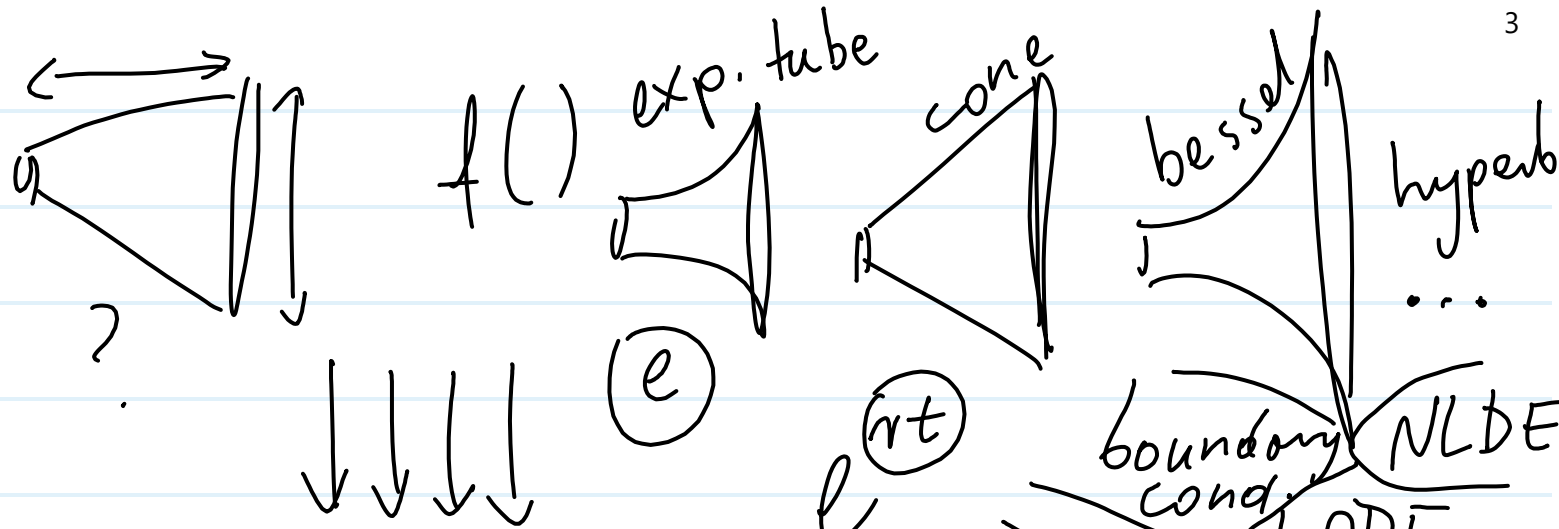


zlin. r-mie
Eulera



filter rezonansowy
(formanty)
subharmoniczne

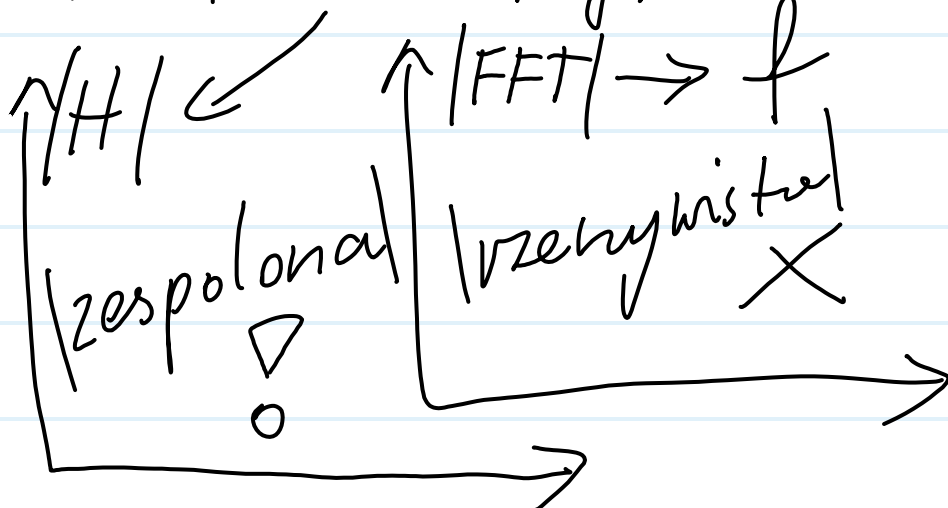




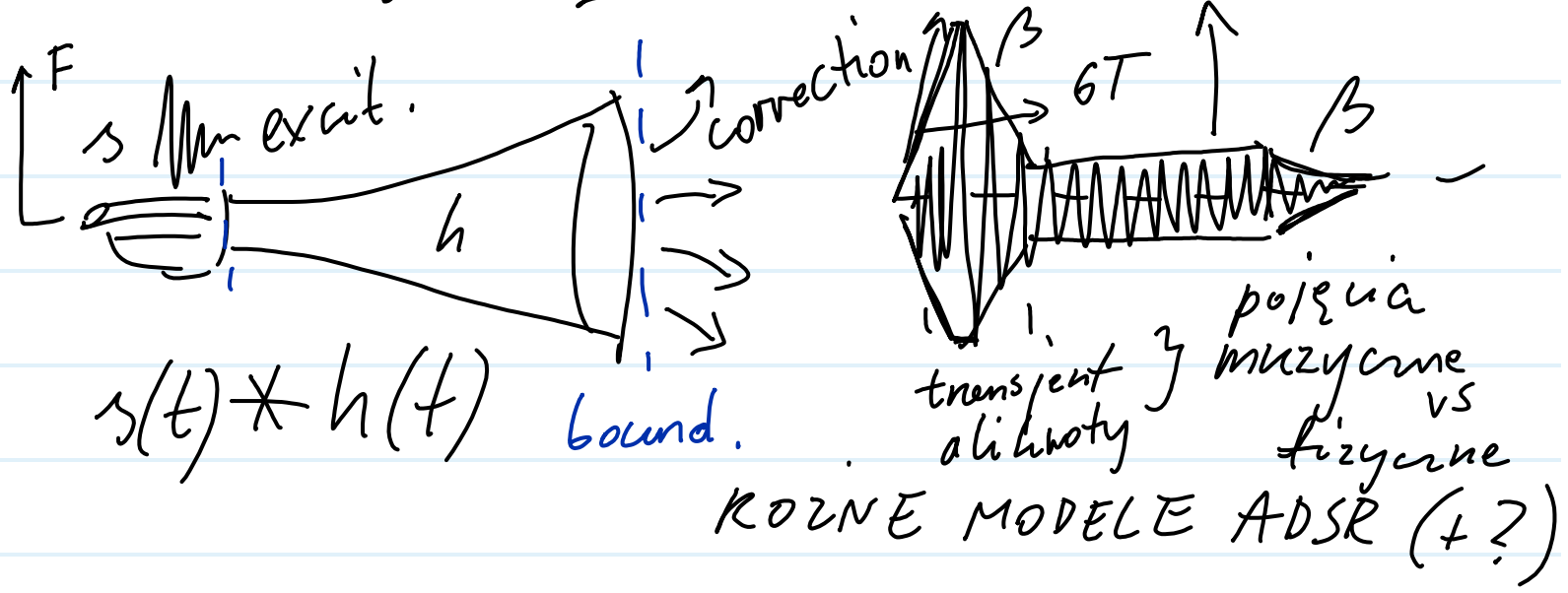
$$H(r+j\omega) = H(s) = \mathcal{L}(\dots DE)$$

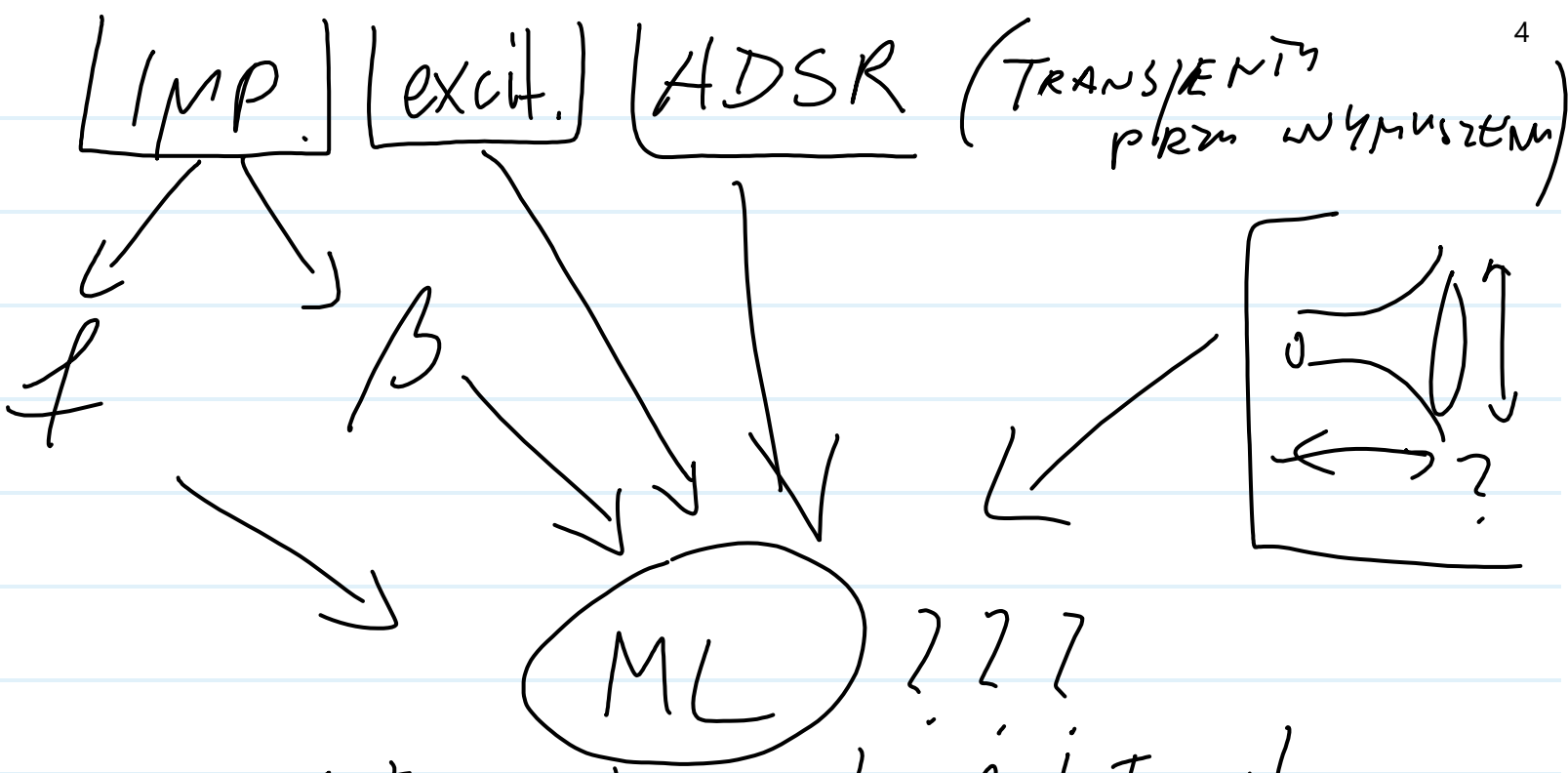
$m\ddot{x} + c\dot{x} + kx = 0$
 $\ddot{x} + \frac{c}{m}\dot{x} + \frac{k}{m}x = 0$
 $2\frac{c}{m} = \beta$
 $\omega = \sqrt{\omega_0^2 - \beta^2}$

TRANSMITANCJA



IMPEDANCJA: $Z \sim H$ (LTI) now?





LSTM, Wavenet, AutoTransf.
 driczdzina STFT, MEL, MFCC, czas, ??
 obraz? dla wymianów
 Tęczenie sieci?

Tensorflow lite PC, μC
 PyTorch keras, itol. ↗
 G-Collab
 Hudderspace Kamil Alex
 Mochot? drugi kolega?