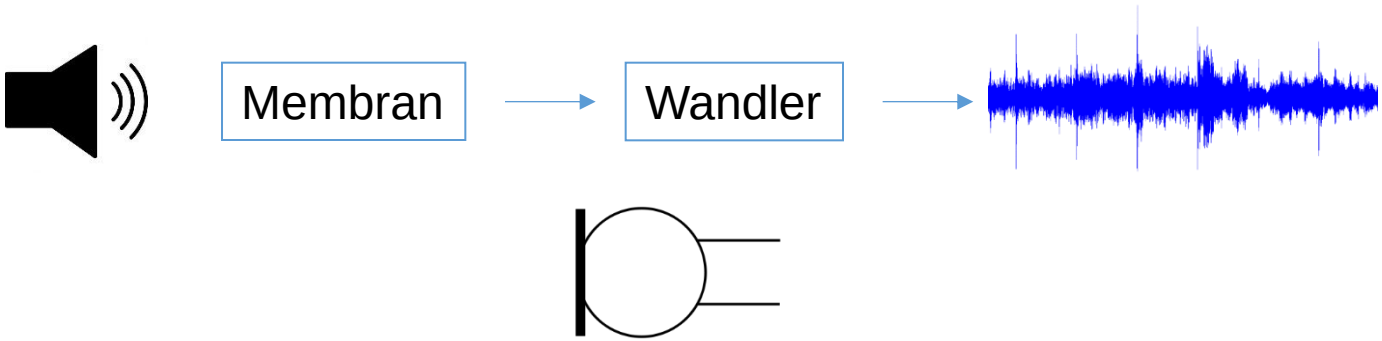
Mikrofone

Schallwandler als Sensoren

Mark Schäfer

PROJEKT LABOR

TU berlin

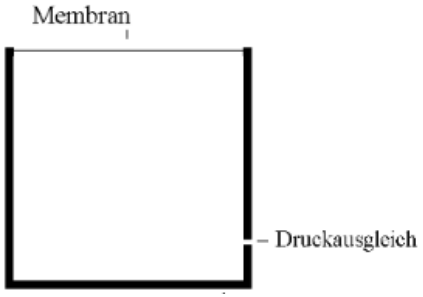

Membran
Wandler

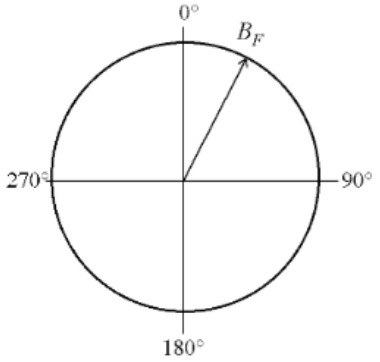
Gliederung

- Wandlerarten (Schalleinwirkung auf Membran)
- Wandlerprinzipien
- Mikrofonsignal

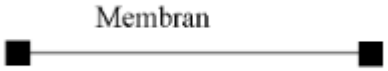
Wandlerarten

idealer Druckempfänger:

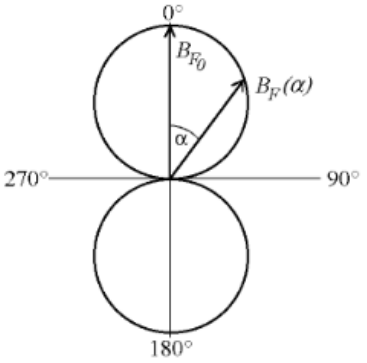




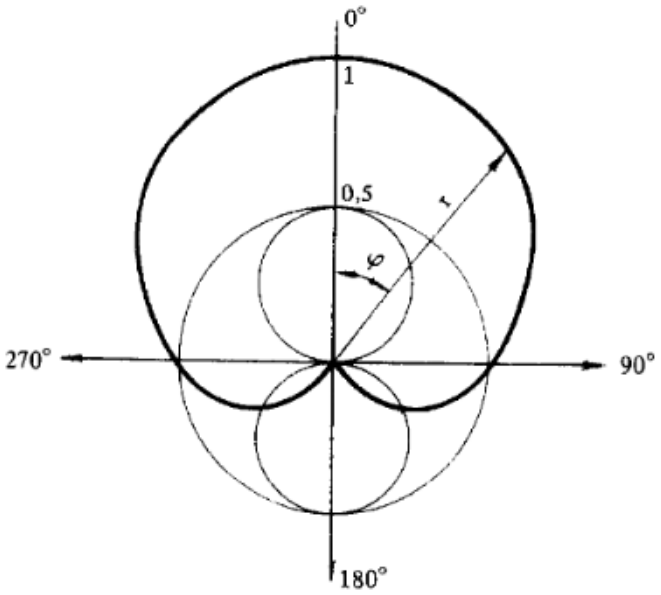
idealer Druckgradientenempfänger:



$$B_F(\alpha) = B_{F0} \cdot \cos\alpha$$



Überlagerung von Kugel- und Achtermikrofon

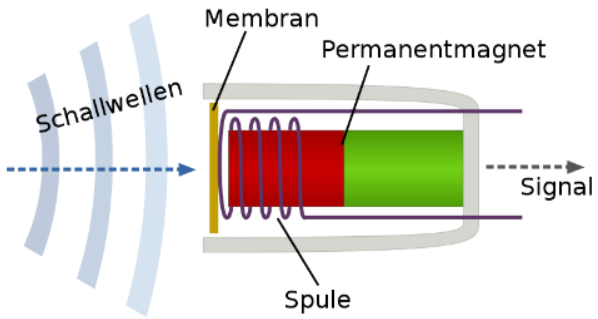


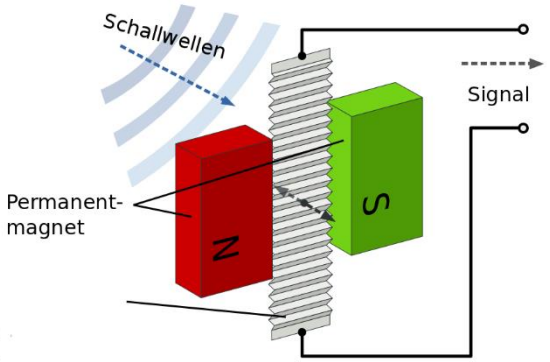
$$B_F(\alpha) = m_1 \cdot B_{F_{Kugel}} + m_2 \cdot B_{F0_{Acht}} \cdot \cos\alpha$$

$$m_1 + m_2 = 1$$

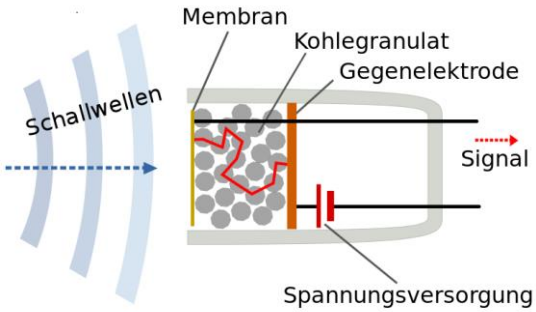
Wandlerprinzipien

Dynamische Mikrofone:

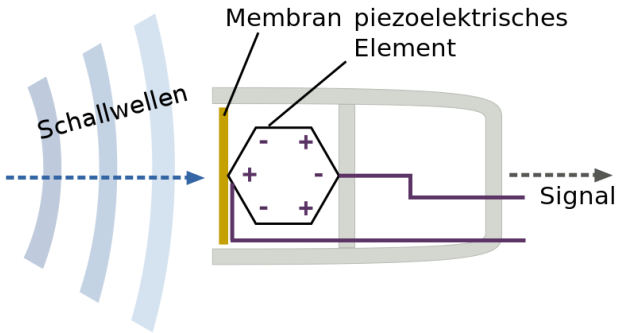




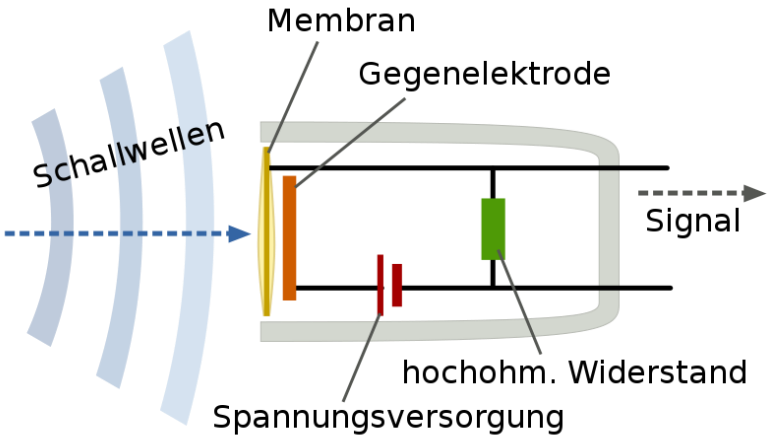
Kohlemikrofon:



Piezo- oder Kristallmikrofon:



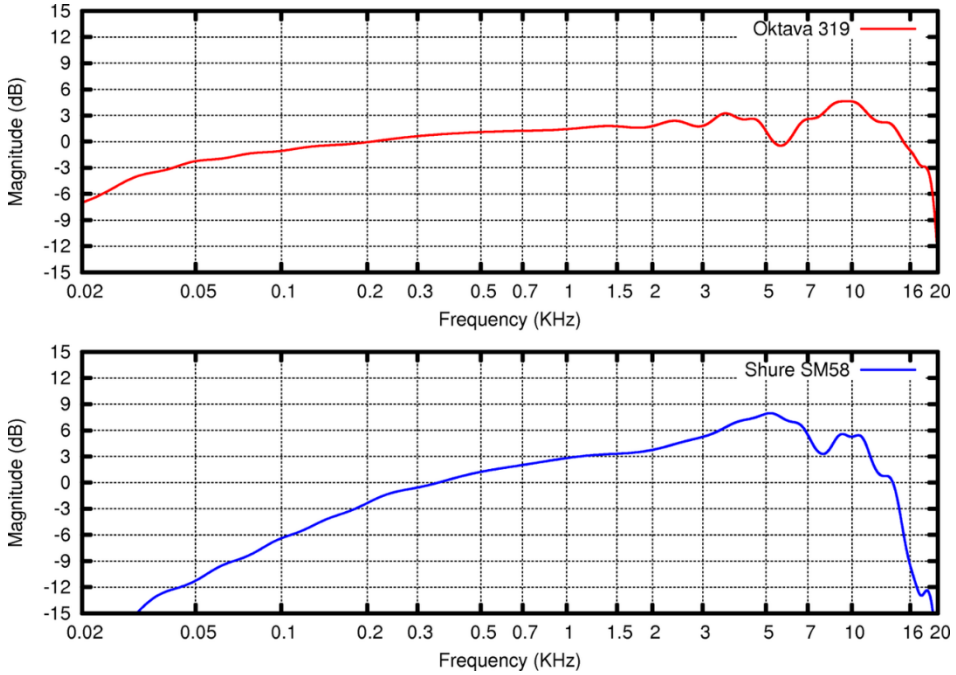
Kondensatormikrofon



NF-KM (benötigt Verstärker)

Sennheiser HF-KM

Mikrofonsignal



Frequenzgang zweier Druckgradientenmikrofone

Quellen

- http://www.uni-koeln.de/phil-fak/muwi/ag/umdruck/mikro.pdf
- http://www.cremotion.de/tontechnik/mikrofone.html
- https://de.wikipedia.org/wiki/Mikrofon