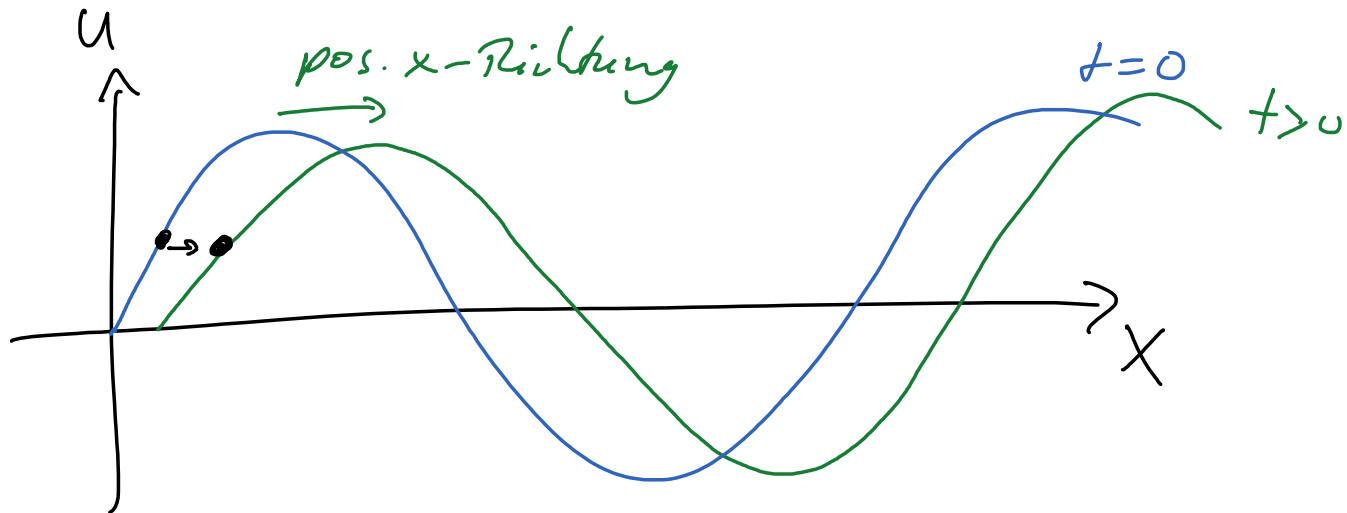
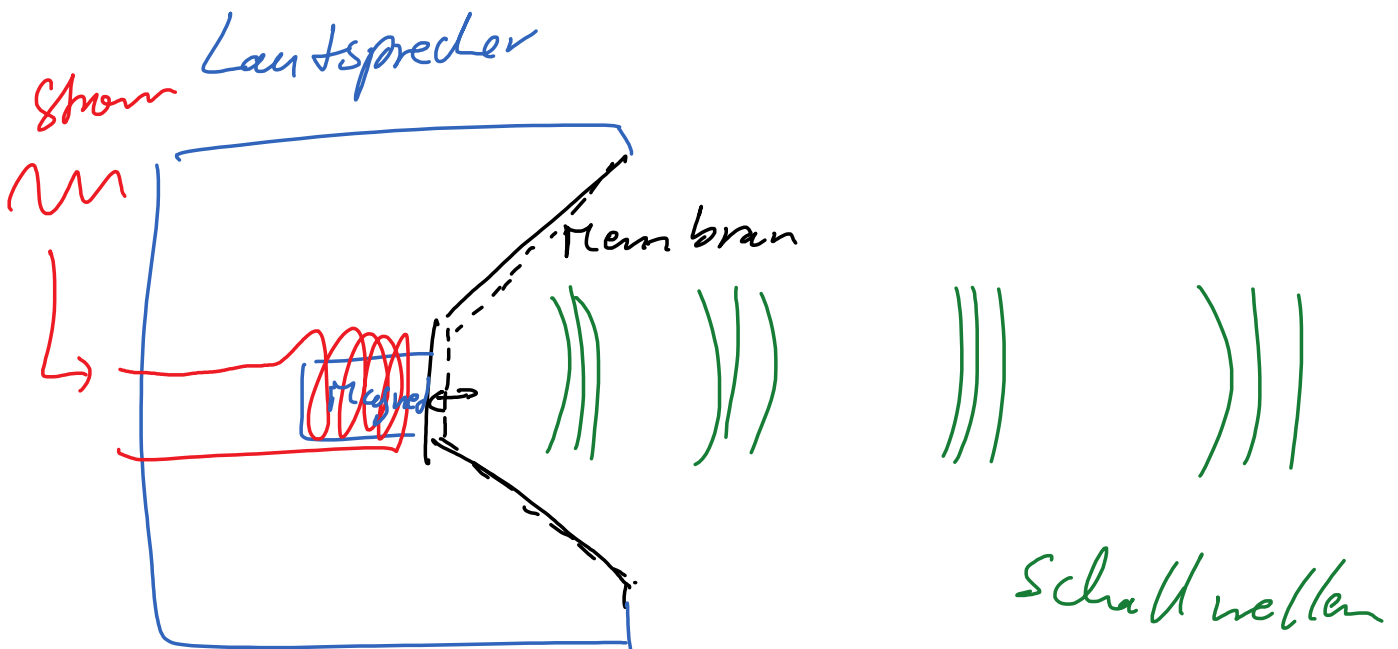


$$(8.2) \quad u(x, t) = u_0 \sin(\omega t - kx + \varphi)$$



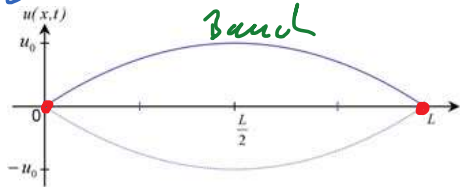
$$\arg(\sin(\omega t - kx + \varphi))$$

für $t > 0$ muss $x > 0$ sein, damit dieselbe Phase entsteht

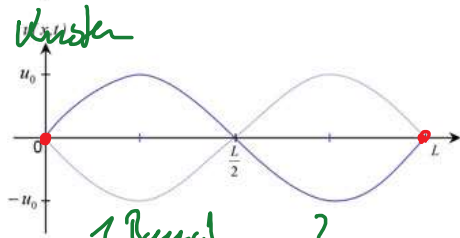


Stehende Seilwellen

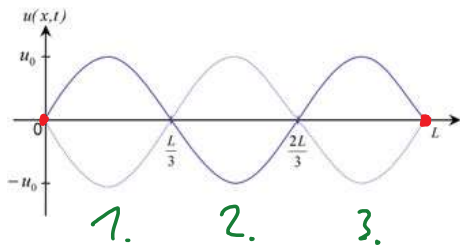
Abb. 8.14, 8.15



$n=1$
 $\lambda_1 = 2 \cdot L$
 Grundschwingung



$n=2$
 $\lambda_2 = L$
 1. Oberschwingung



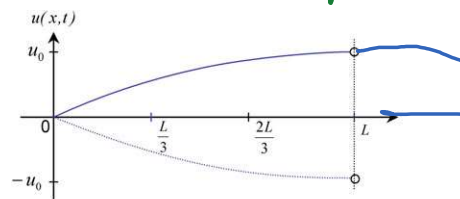
$n=3$
 $\lambda_3 = \frac{2 \cdot L}{3}$
 2. Oberschwingung

$$u(x=0) = 0$$

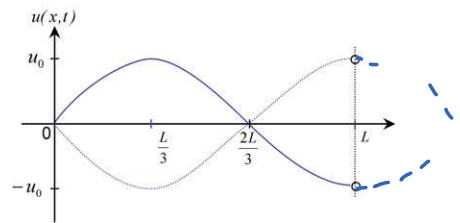
$$u(x=L) = 0$$

rechtes Ende offen

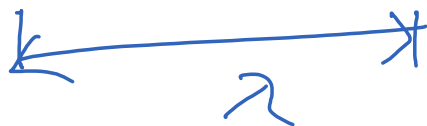
$$\pi = 4L$$



$n=1$
 $\lambda_1 = 4 \cdot L$
 Grundschwingung



$n=2$
 $\lambda_2 = \frac{4 \cdot L}{3}$
 1. Oberschwingung



Wellenwanne

Schwingen

