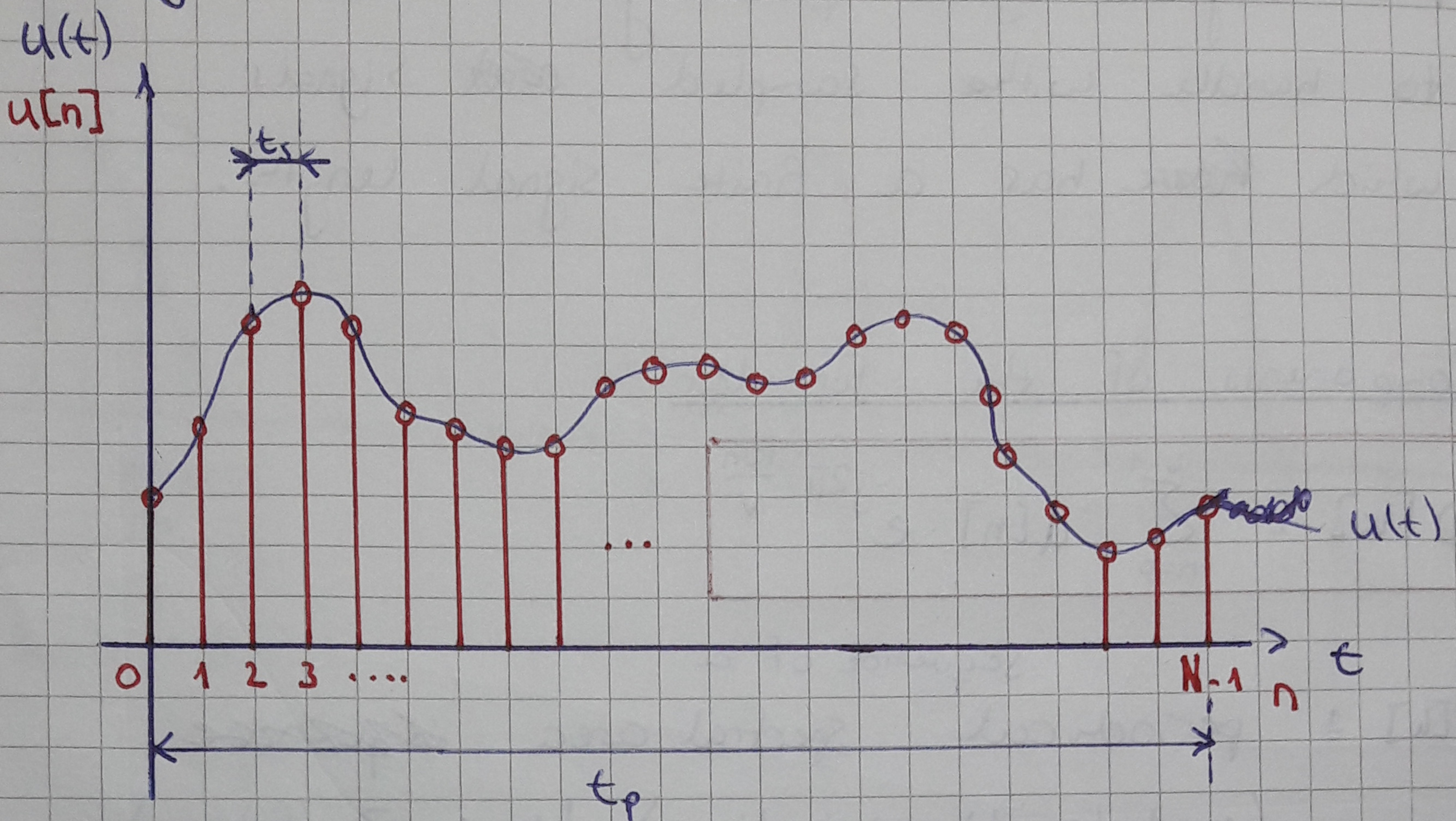


Sampling and Periodification

Sampling



$\rightarrow t \in \mathbb{R} \rightarrow n \in \mathbb{Z}$

$\rightarrow u[n]$ is only defined for values $n \in (0, \dots, N-1; \in \mathbb{Z})$

Konsequenzen

aperiodisch periodisch	continuous	discret
Periodic		
aperiodisch Aperiodic		

Sampling as a mathematical operation

$$u_s(f) = u(f) * \sum \delta(f - k \cdot f_0)$$

$$u_s(t) = u(t) \cdot \sum_{k=0}^{N-1} \delta(t - k \cdot t_0)$$

$$u_s(f) = u(f) * \sum_{k=0}^{N-1} \delta(f - k \cdot f_0) \quad | \quad f_0 = \frac{1}{t_0}$$