

# Diskretne Fourierova transformacija (DFT)

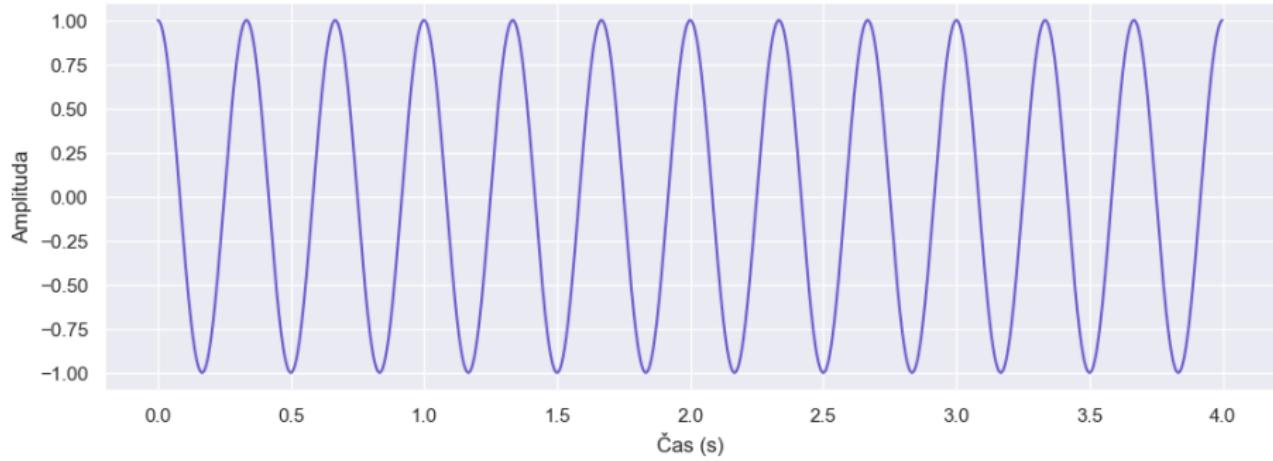
## Projektna naloga

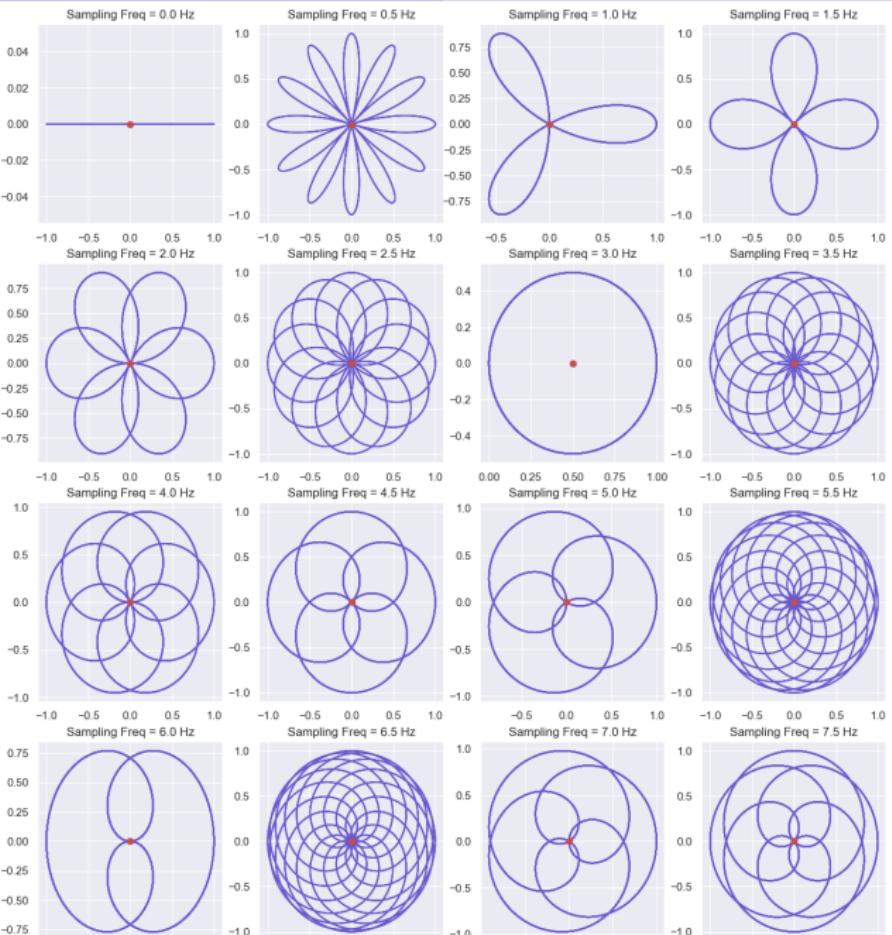
Amanda Babič, Manca Kavčič

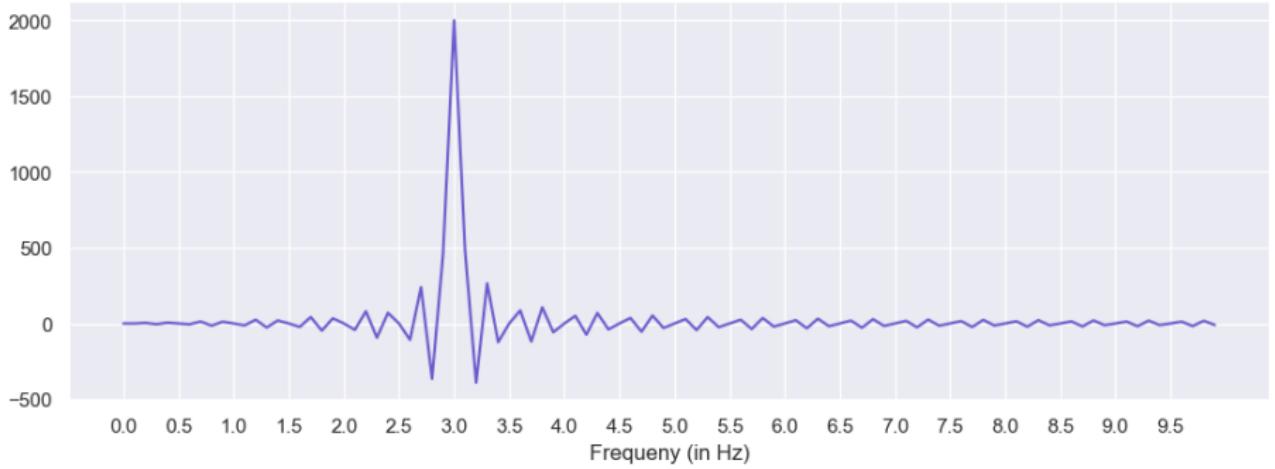
Fakulteta za matematiko in fiziko

19. januar 2026

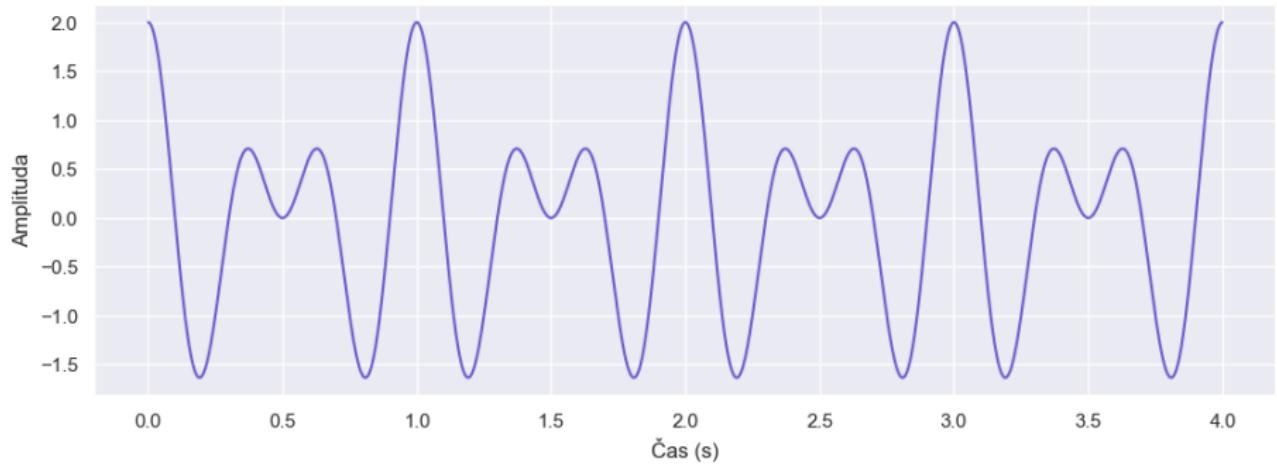
Kosinusni val s frekvenco 3 Hz

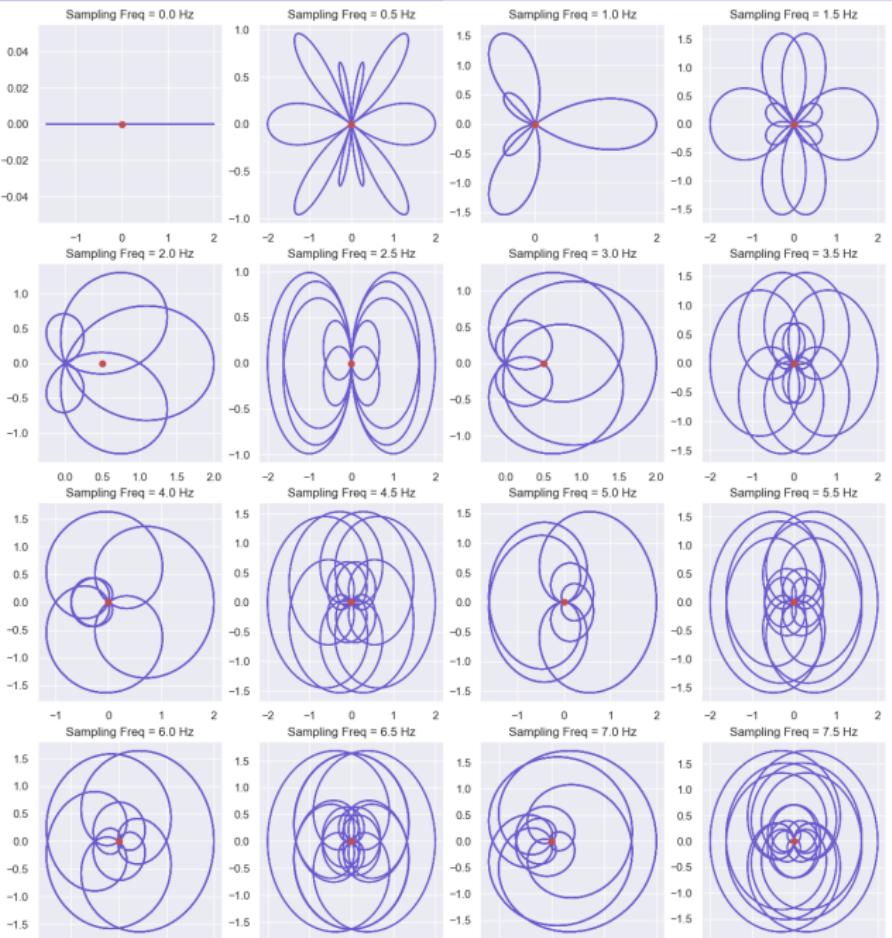


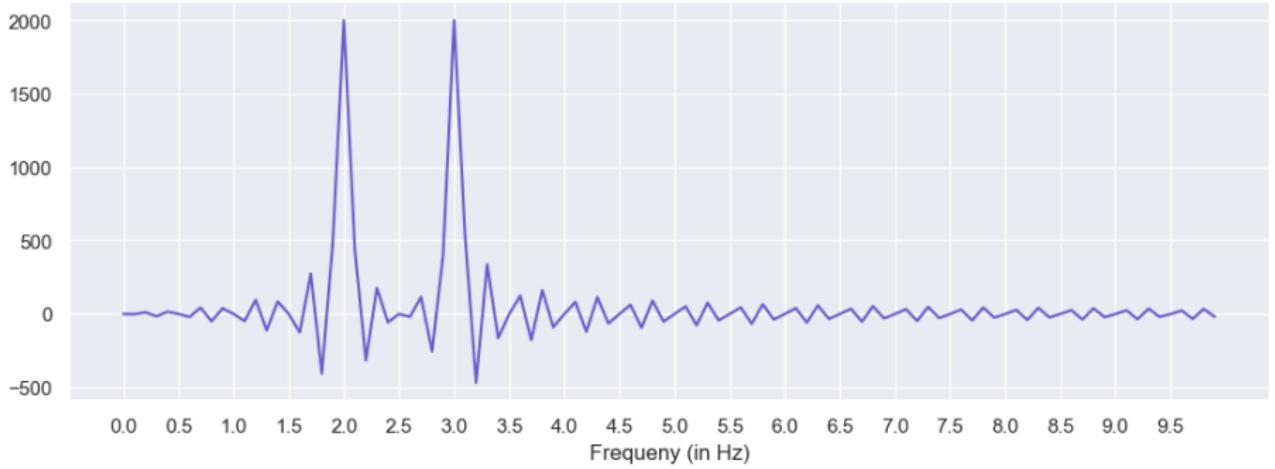


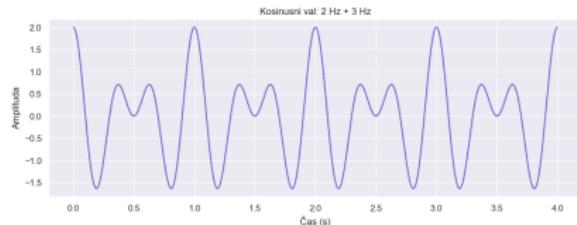
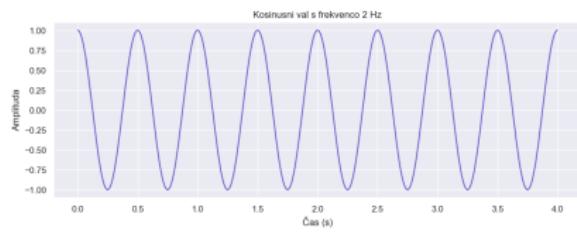
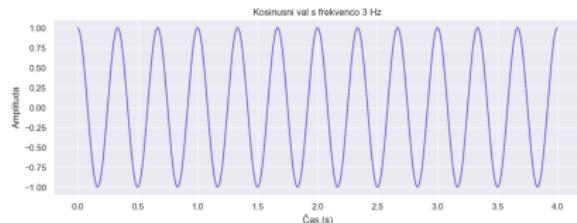


Kosinusni val: 2 Hz + 3 Hz





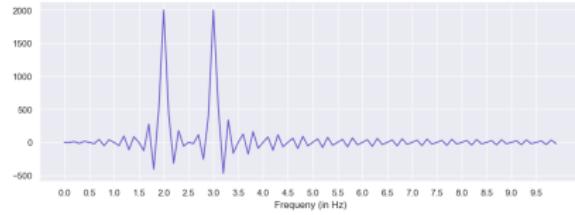
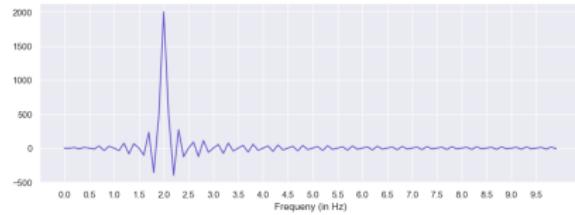
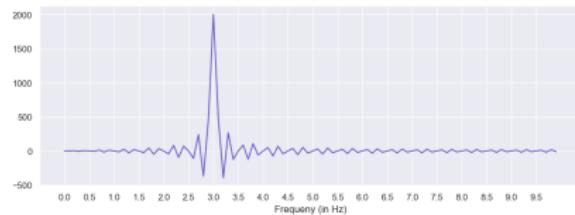




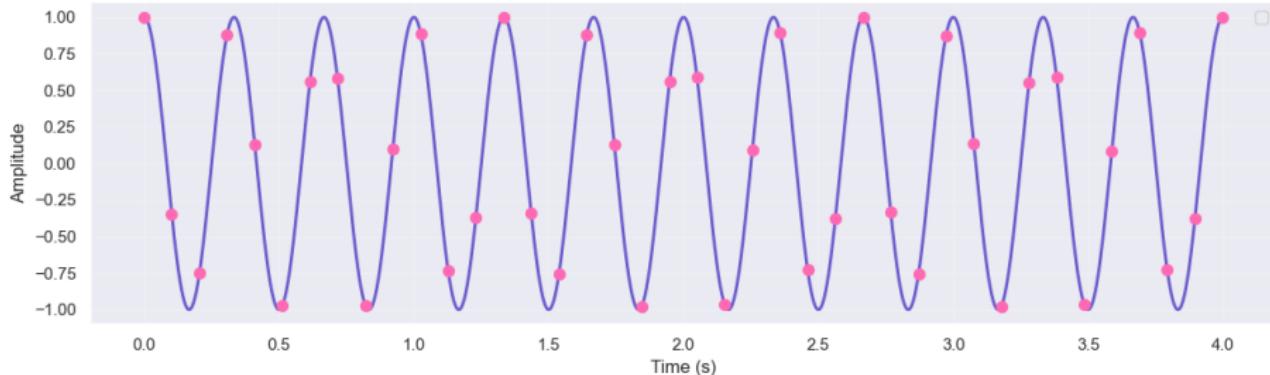
→  
**DFT**

→  
**DFT**

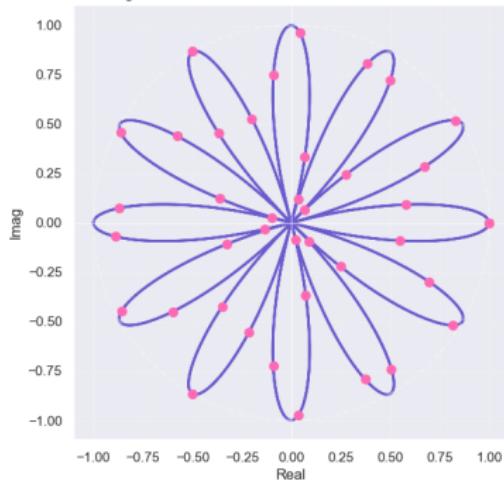
→  
**DFT**



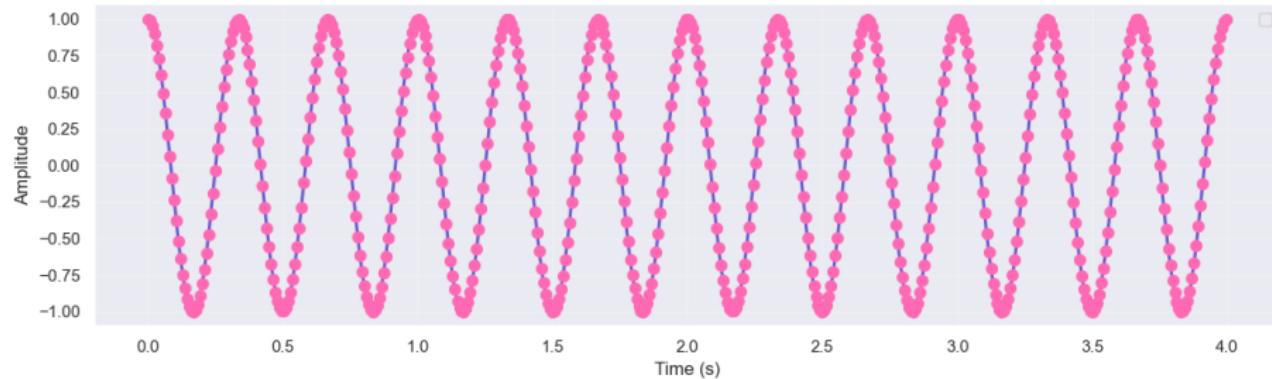
Kosinusni val (3 Hz) 40 enakomerno razporejenimi točkami



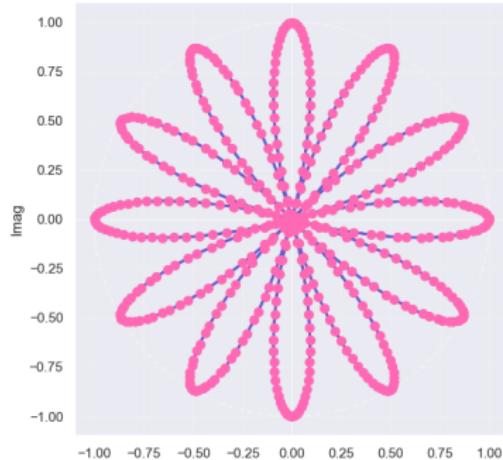
Signal 3 Hz zavit okoli krožnice s frekvenco 0.5 ciklov/s



Kosinusni val (3 Hz) 40 enakomerno razporejenimi točkami



Signal 3 Hz zavit okoli krožnice s frekvenco 0.5 ciklov/s



## DFT:

$$X_k = \sum_{n=0}^{N-1} x_n \cdot e^{-2\pi i \frac{k}{N} n}$$

## IDFT:

$$x_n = \frac{1}{N} \sum_{k=0}^{N-1} X_k \cdot e^{2\pi i \frac{k}{N} n}$$

$$k, n = 0, 1, \dots, N - 1$$