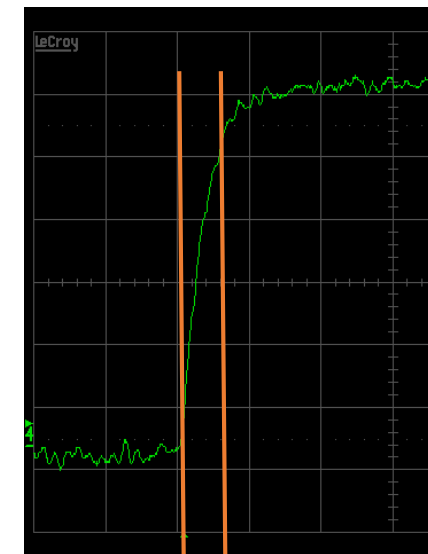
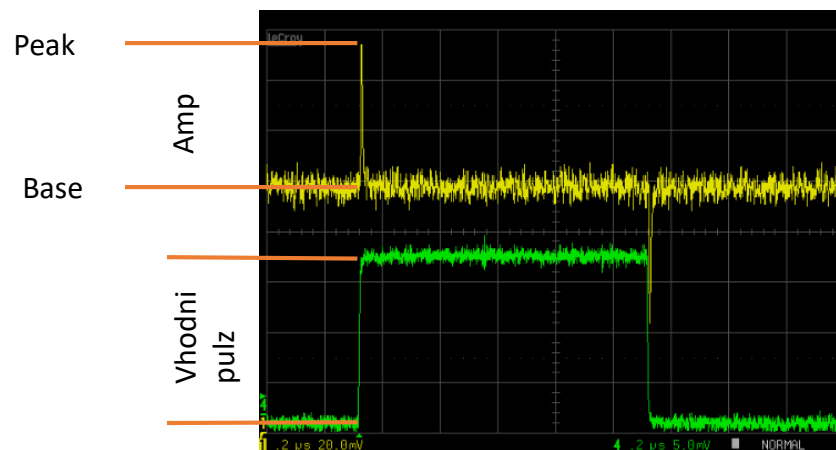


# Calypso-C meritve z zunanjimi pulzi

Miha Mali

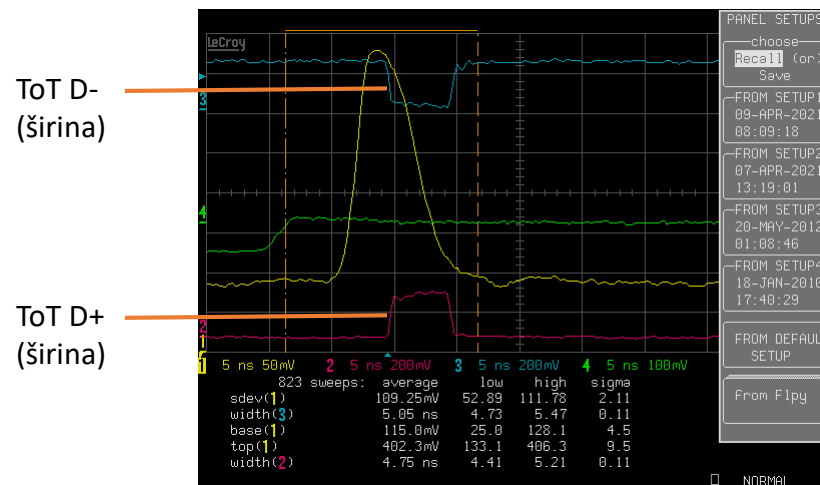
- Meritve 4 čipov:
  - OSU2 in OSU4 neobsevana kontrolna čipa, bondirana v OSU
  - LJU100 obsevan s 100 Mrad
  - LJU300 obsevan s 300 Mrad

- Zunanji pulzer CAEN DT5810B
  - stopničast pulz
  - Dolžina:  $1\mu\text{s}$
  - Rise time [10%-90%]: 3-5 ns
  - Amplituda: 3 mV-100 mV

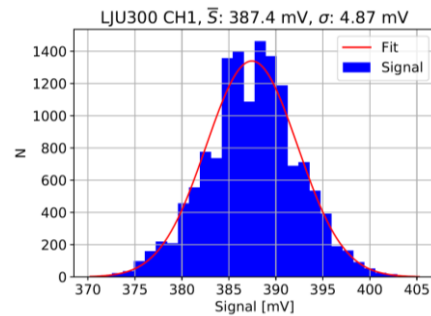
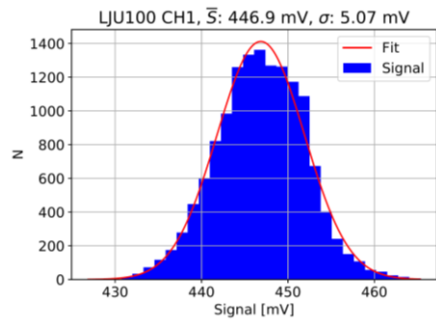
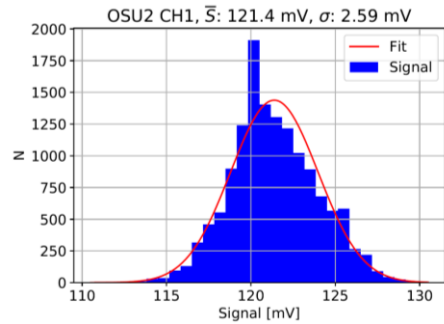


3-5 ns

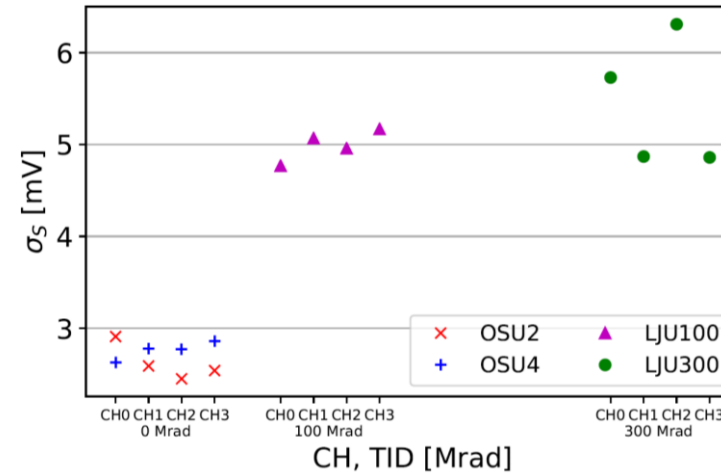
- Konfiguracija čipa prek I2C, vedno vklopljen le testni kanal
- Meritve z osciloskopom, povprečenih >200 vrednosti



- Meritve šuma in baseline signala

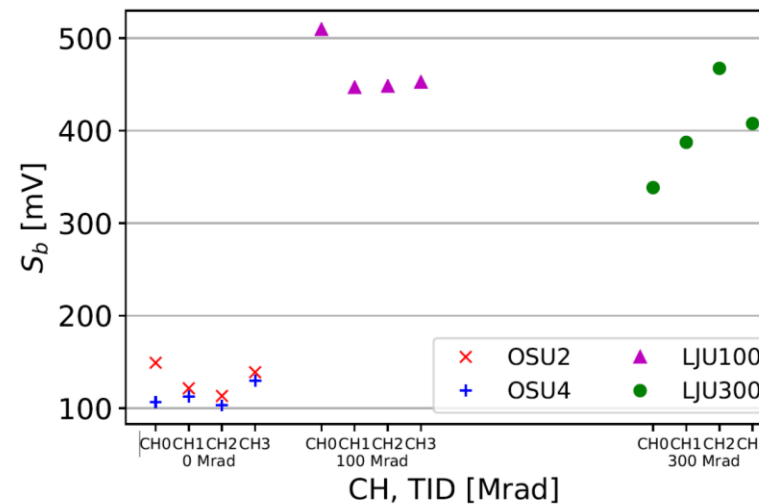


### Šum za različne čipe



Šum in baseline signal se povečata z obsevanjem

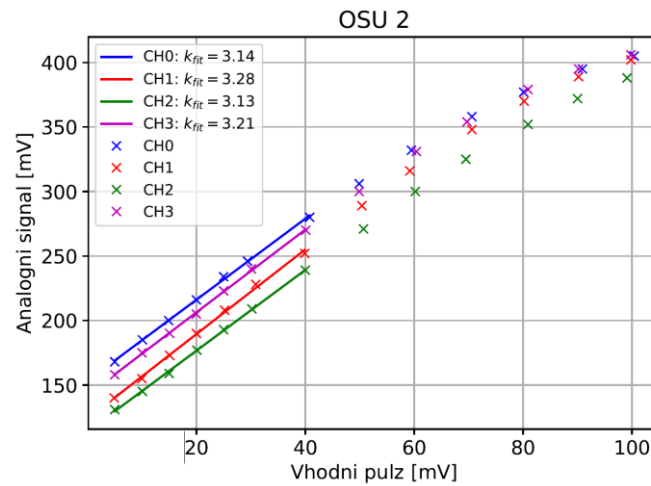
### Baseline signal za različne čipe



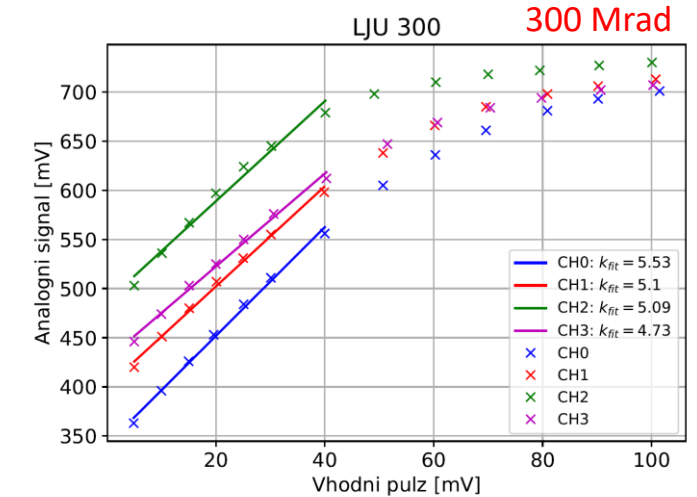
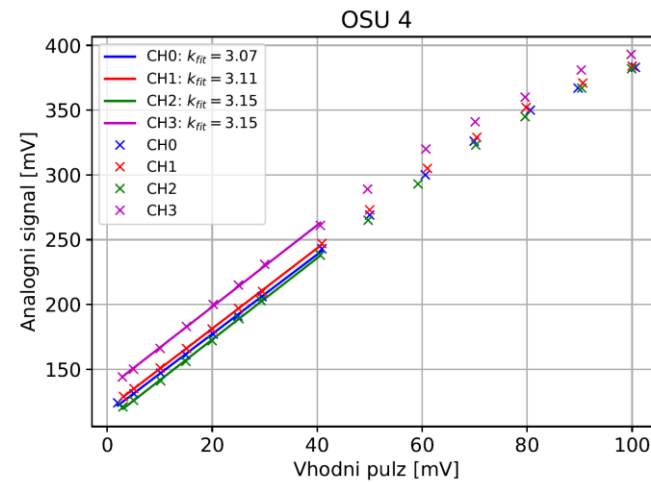
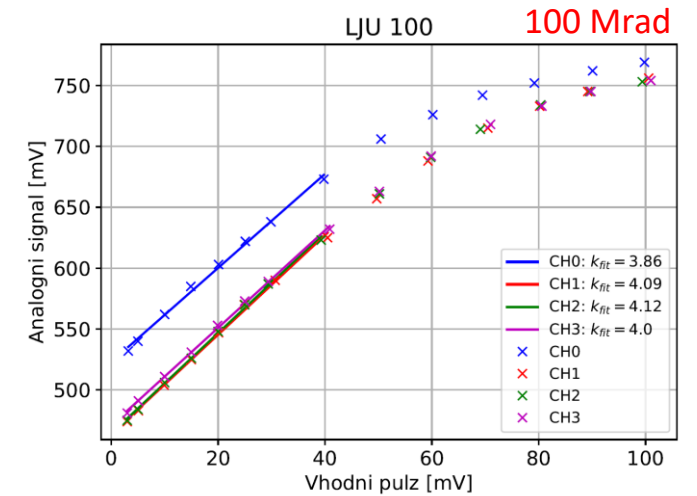
# Analogni signal iz zunanega pulza

- Ojačanje vhodnega pulza se večja z obsevanjem čipa
- Linearen fit v območju od 3 mV do 40 mV
- Za visoke vhodne pulze pride do „saturacije“
- Saturacija veliko prej pri obsevanih čipih

## Kontrolna čipa



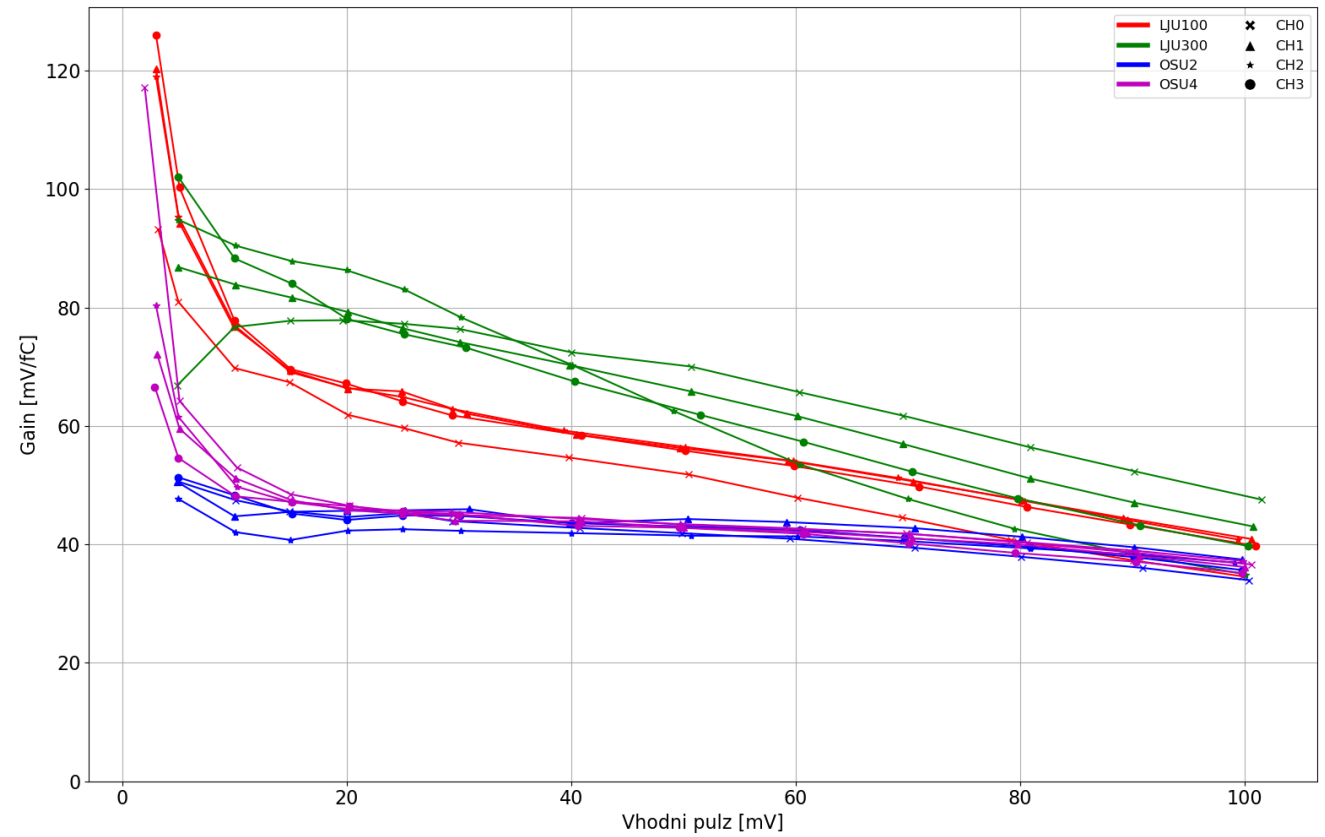
## Obsevana čipa



# Preračunan gain za vse čipe in kanale

- Naboj na mV vhodnega pulza: 468.75 e/mV

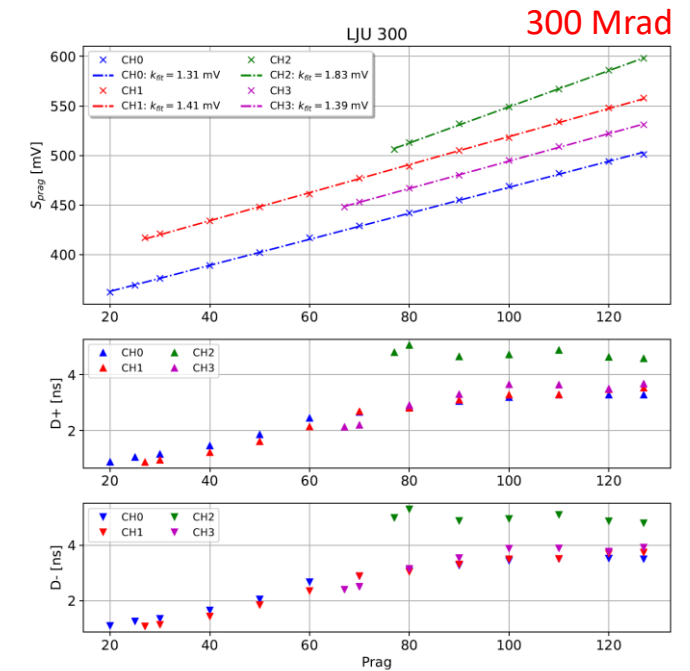
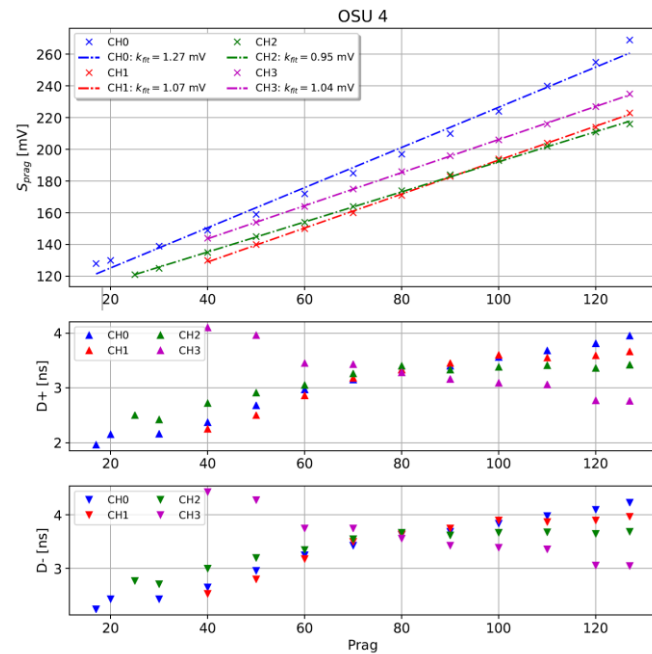
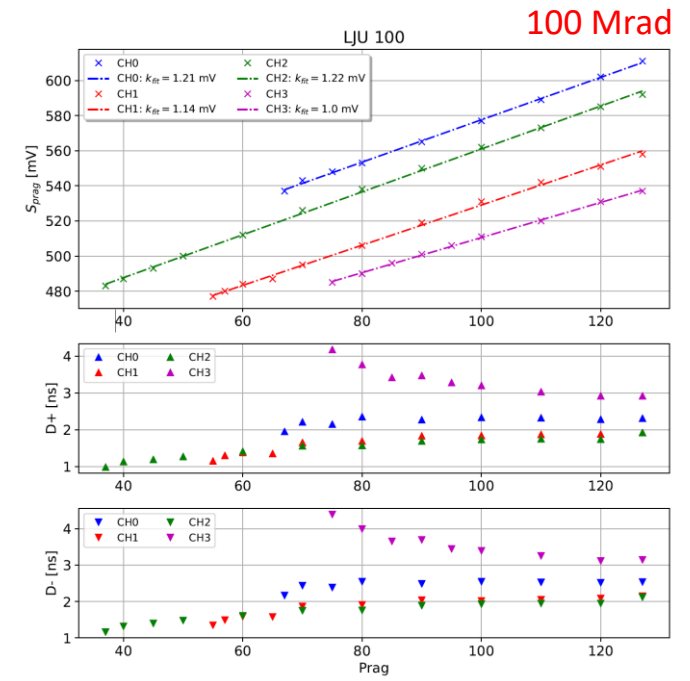
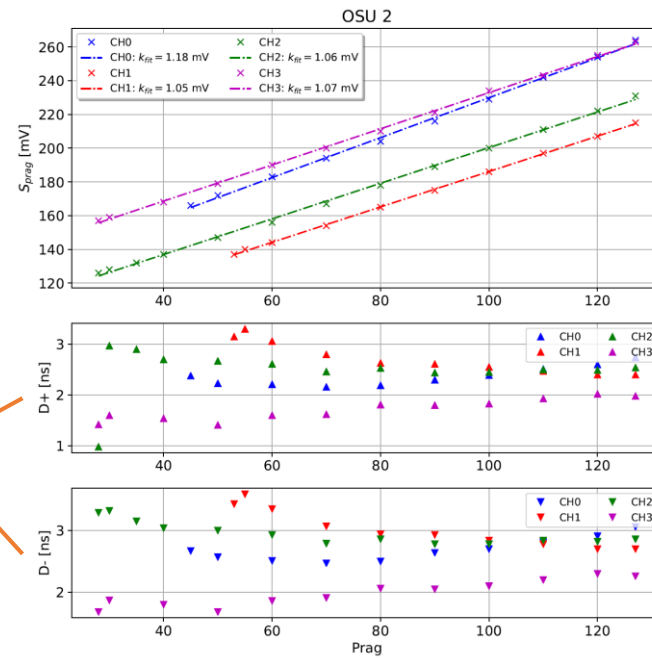
- Gain: 
$$\frac{Ampl [mV]}{Pulz [mV] \cdot 468.75 e/mV \cdot 1.602 \cdot 10^{-4} fC}$$





# ToT digitalna izhoda pri signalu na pragu

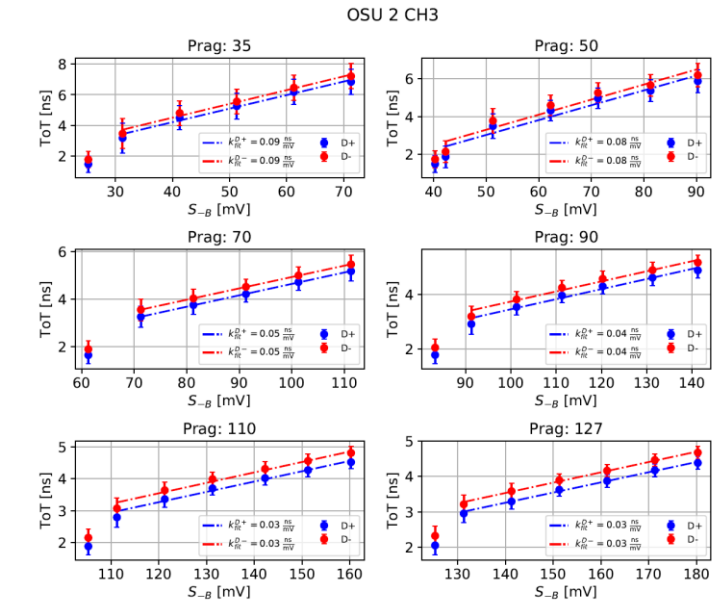
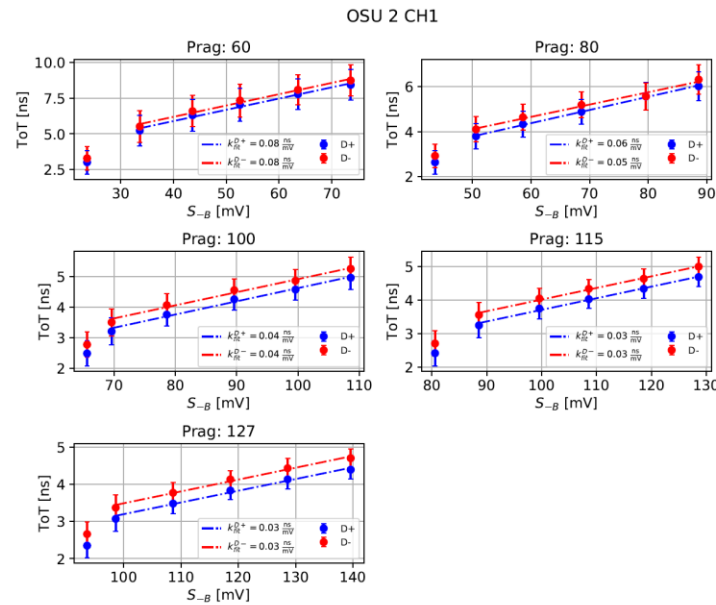
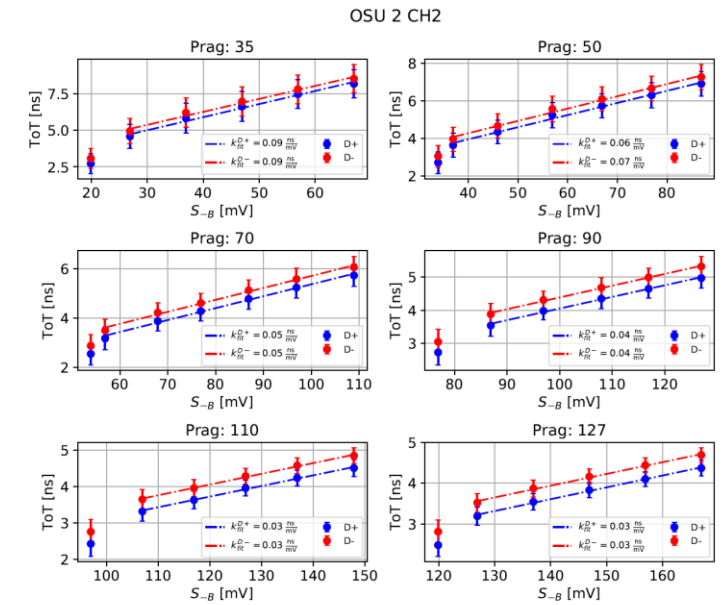
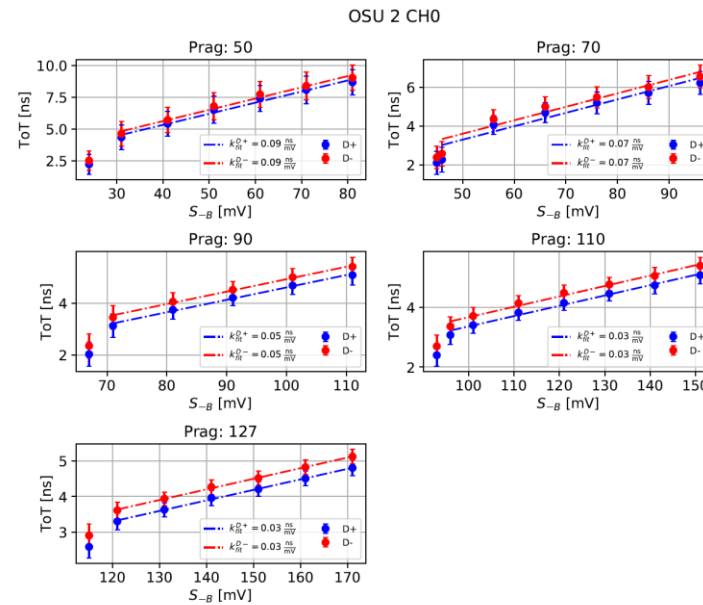
ToT tik nad pragom



## OSU 2 kontrolni čip

### ToT za različne amplitude pulzov pri različnem pragu

- Povsod dobimo linearen odziv, razen za signale tik nad pragom.
- Kontrolni čip, vsi kanali.
- Prag nastavljen različno za različne kanale/čipe.





# ToT za različne amplitude pulzov pri različnem pragu

- 1 kanal, različni čipi

