

Piano di misure

•Glicerina H8

- Ottimizzazione sequenza
- Esame rumore fondo in presenza di segnale
- Effetti del salvataggio immagine in 16Bit, averaging, parametri acq.
- Pratica con "dati raw"

•Glicerina D8

- Test immagini Basso SNR
- Training denoiser

Composti Fluorati

(To be started)

La sonda è arrivata
(Grazie Silvia)

Piano di misure

•Glicerina H8

Concentrazione

H ~ 0.1 mol /ml (normale)

pixel = 66 μm x 66 μm

Thickness 300 μm – 1 mm

1 – 8 scan averages

•Glicerina D8

Concentrazione

•H ~ $2 \cdot 10^{-3}$ mol /ml

Composti Fluorati

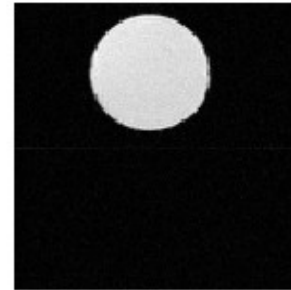
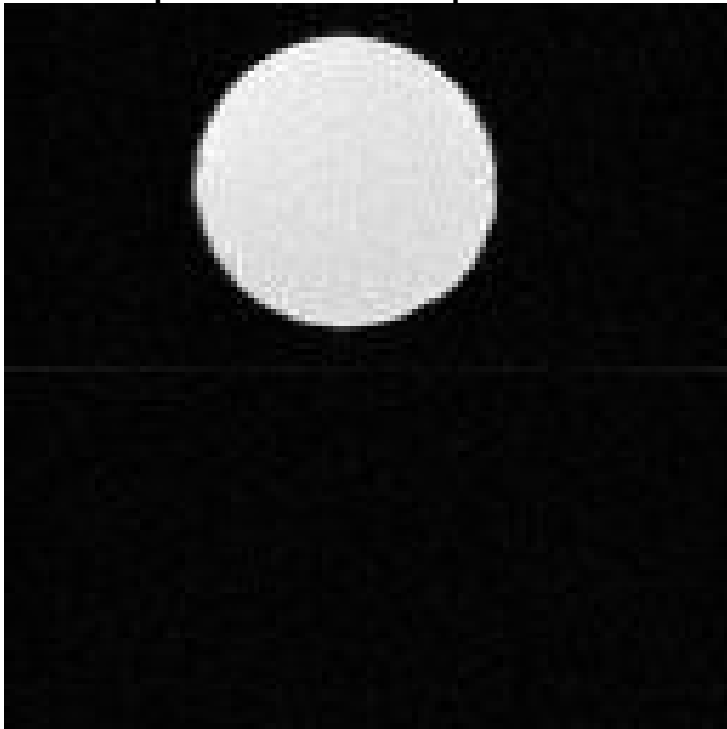
(To be started)

Concentrazioni di riferimento

$< 10^{-4}$ mol /ml

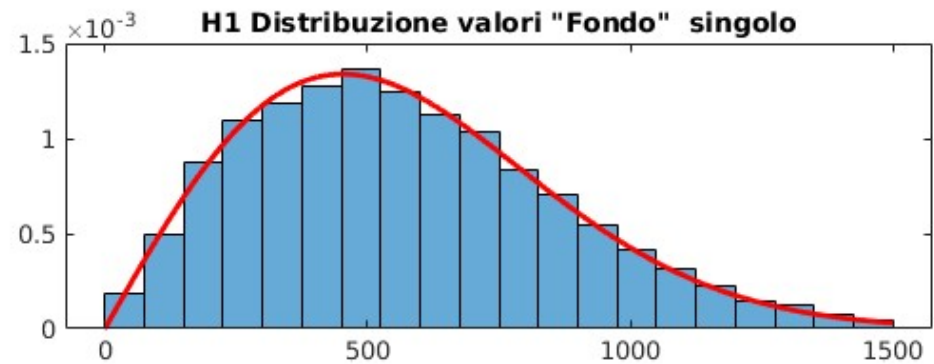
Glicerina H8

Acquisizione in presenza di glicerina



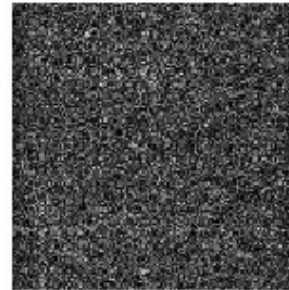
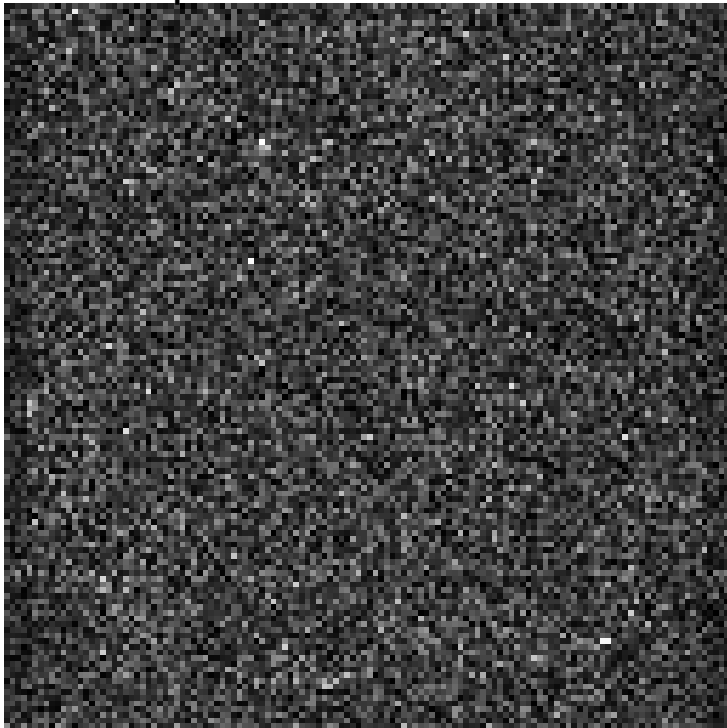
$$f(x|B) = \frac{x}{B^2} e^{\frac{-x^2}{2B^2}}$$

Rayleigh, B : 453 [449;457]

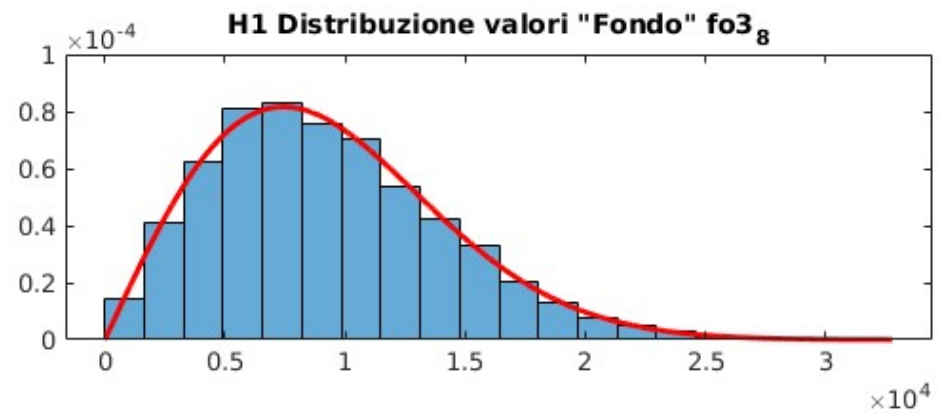


Fondo

Acquisizione in assenza di glicerina (solo fondo)

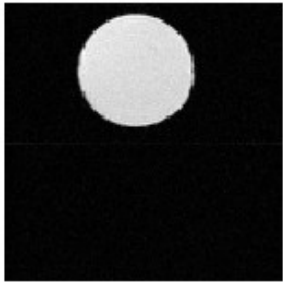


Rayleigh, B : 7430 [7374;7487]

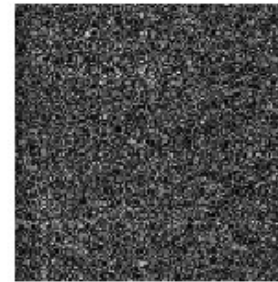


Glicerina H8

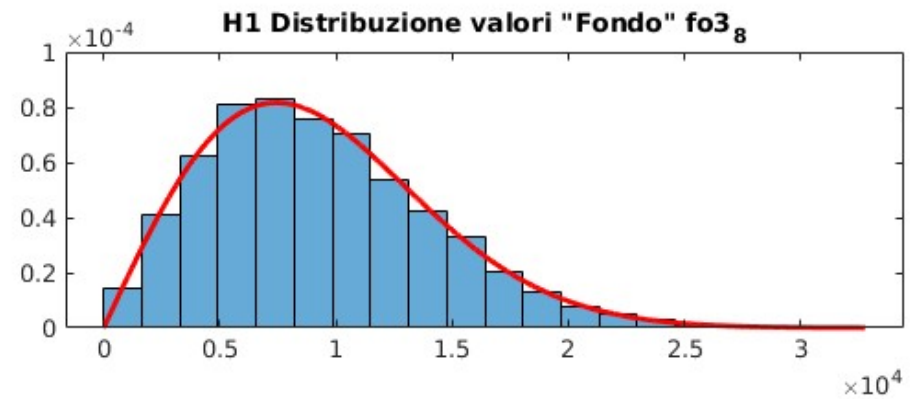
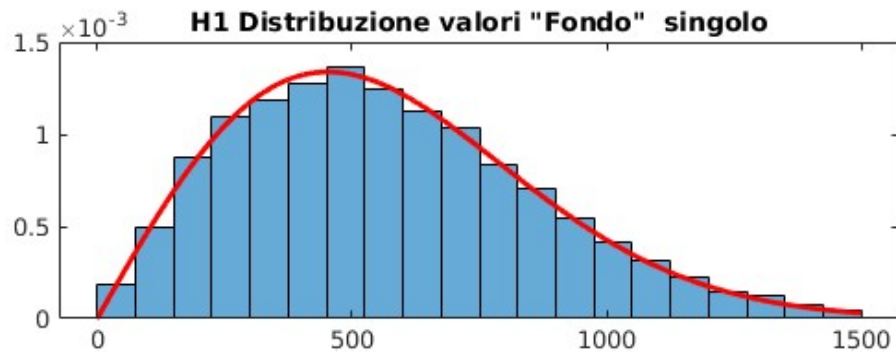
$$f(x|B) = \frac{x}{B^2} e^{-\frac{x^2}{2B^2}}$$



Rayleigh, B : 453 [449;457]

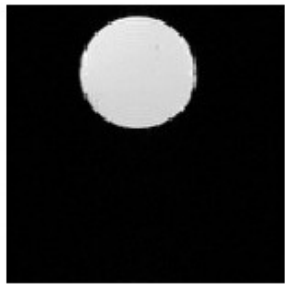


Rayleigh, B : 7430 [7374;7487]

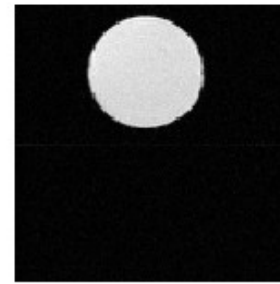


Effetti profondità colore (16bit) / Receiver gain (fisso il punto di bianco)

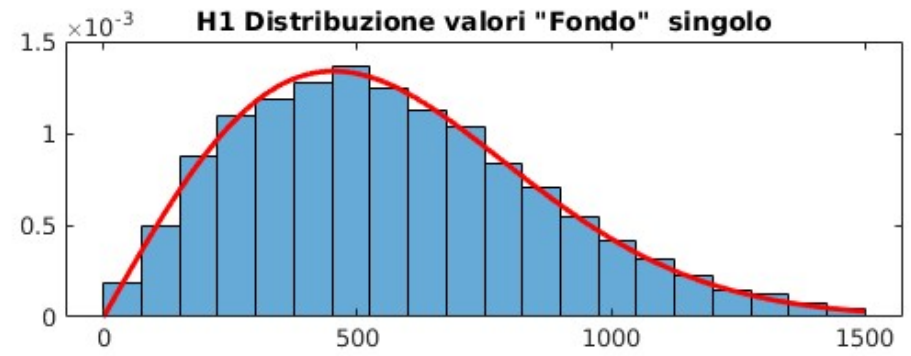
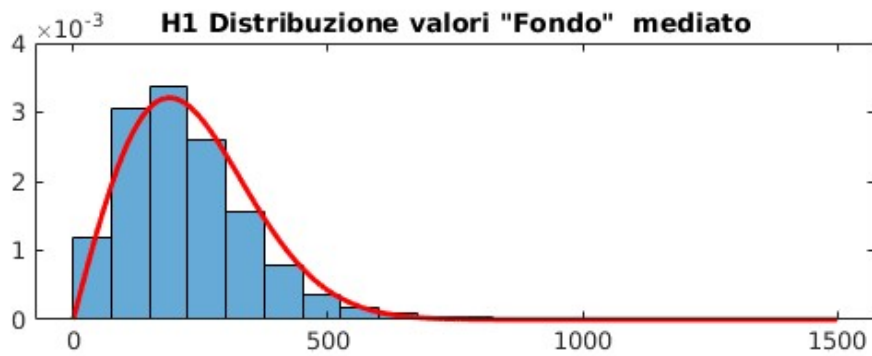
Glicerina H8



Rayleigh, B : 189 [187;191]



Rayleigh, B : 453 [449;457]

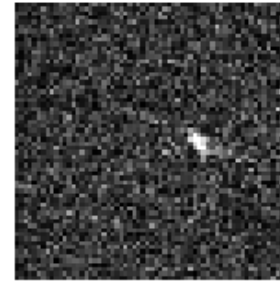


Stesso Receiver Gain, Media su 8 acquisizioni

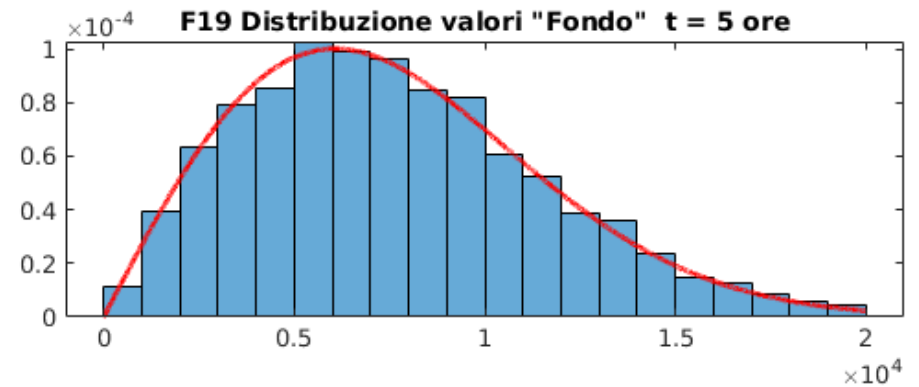
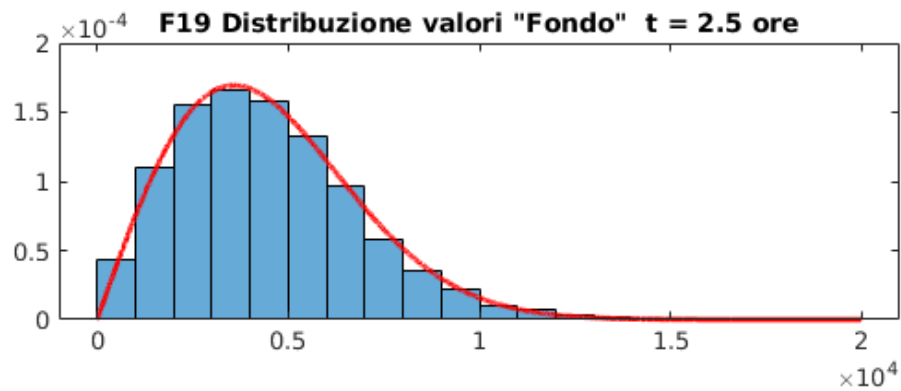
Fluoro (Tesi S. Cignotti)



Rayleigh, B : 3582 [3528;3637]



Rayleigh, B : 6063 [5971;6158]

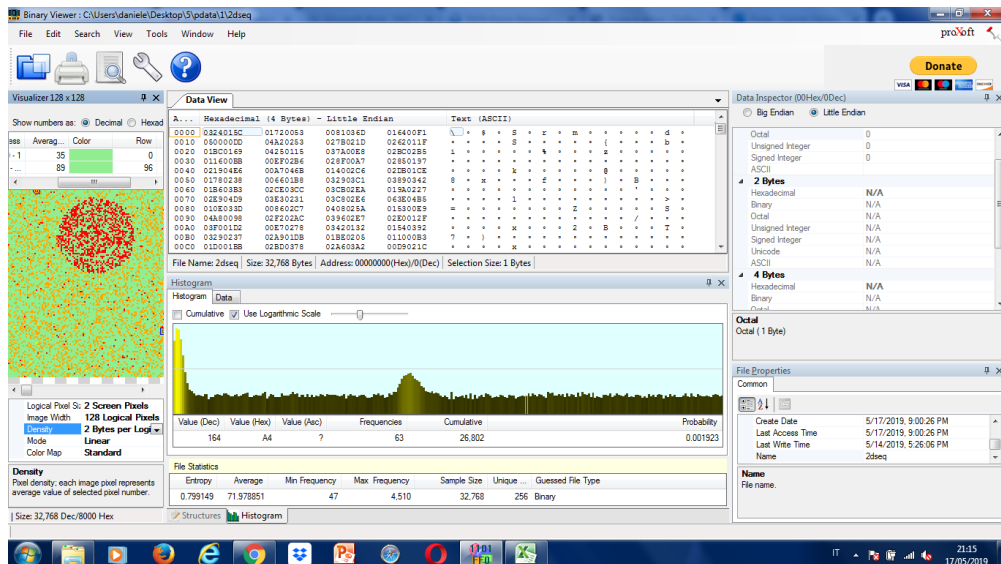
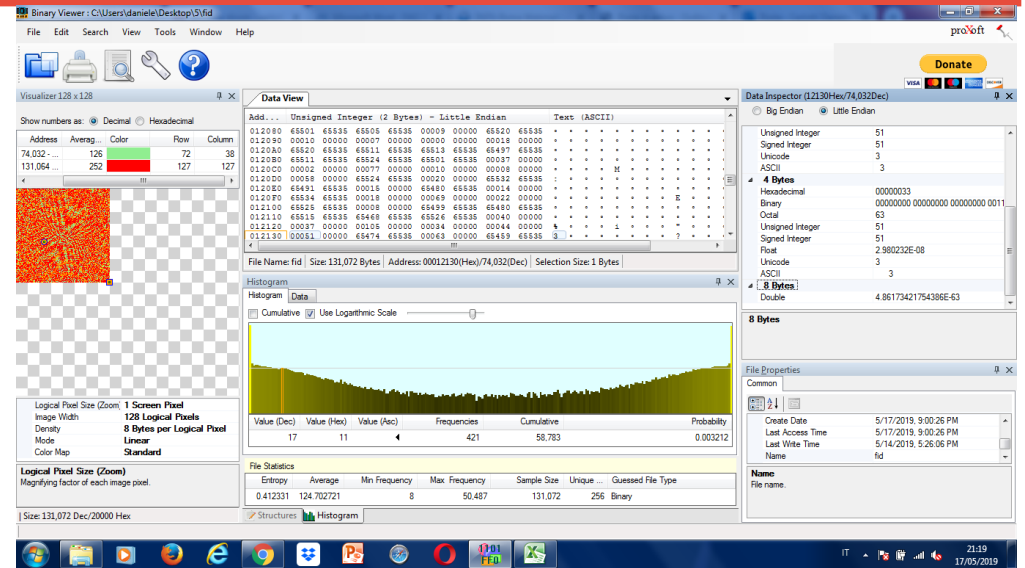


Riscaldamento dei gradienti e dell'elettronica di acquisizione

Dati raw fid / 2dseq (Grazie Daniele)

Software di acquisizione:
bruker paravision 3 (2005)

Abbiamo la necessità di leggere
e importare in python/MATLAB I
Dati raw



Conclusioni

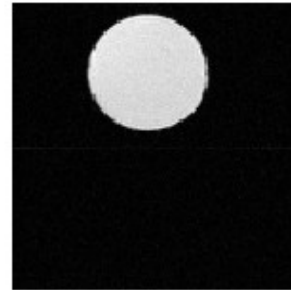
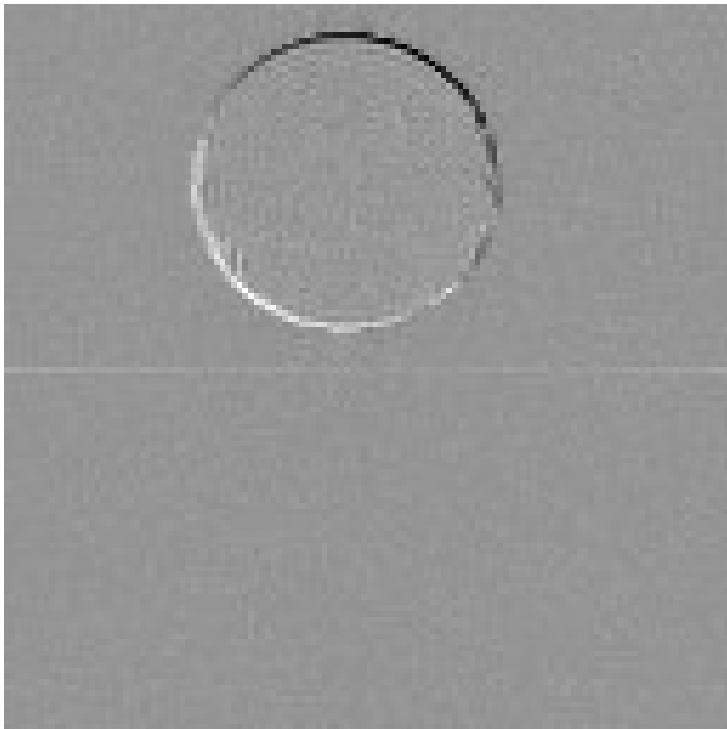
Confronto di immagini a basso segnale va fatto mantenendo il numero di medie e il guadagno dell'amplificatore fissati.

Gli effetti sono molto più marcati su immagini a basso rapporto segnale rumore.

Prossimi passi:

- Pulire il fantoccio e iniziare le misure a basso SNR (G-D8)**
- Implementazione algoritmo denoising e addestramento**

Sottrazione media



Rayleigh, B : 453 [449;457]

