

V_r ref } TD
 V current }
 $V_{TDEIT} d_i = [V - V_r]_i$ $\vec{d} = \vec{V} - \vec{V}_r$
 $N_{\text{ar-TD}} d_i = \frac{(V - V_r)_i}{(V_r)_i}$ $d = \frac{V - V_r}{V_r}$
 N_{TDEIT} $d = \text{diag}(v)^{-1} (V - V_r)$

Apr 20-08:34

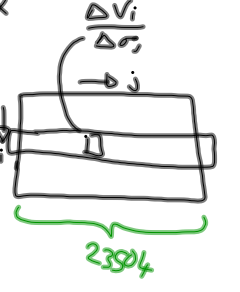
TOPICS

- electrode errors
- stimulation patterns
- GREIT w/ 2 layers
- choose/configure algs
 - image priors
 - shape
 - background physics
- L-curve / choose HP
- bounded solvers
- absolute solvers

Apr 20-10:16

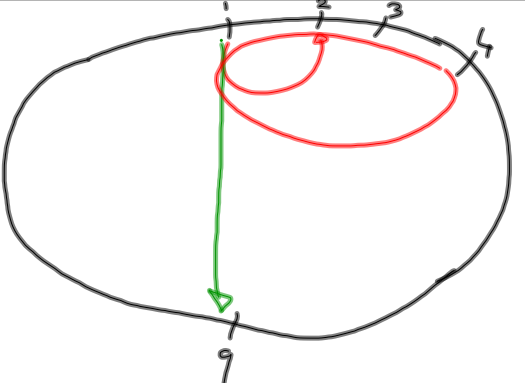
Jacobian

\equiv Sensitivity Matrix

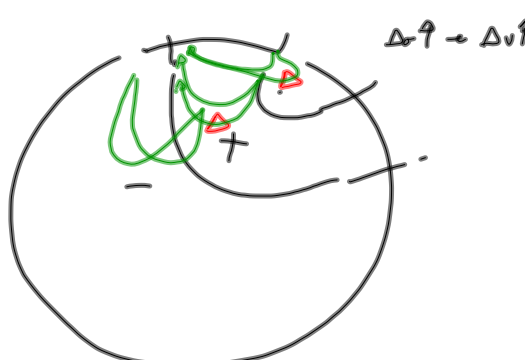
$$J = \frac{\Delta V}{\Delta \sigma}$$


$\frac{\Delta V_i}{\Delta \sigma_j}$
 $\rightarrow j$
 i
 2394

Apr 20-10:16

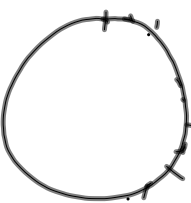


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$\Delta \sigma \rightarrow \Delta V$

Apr 20-10:16



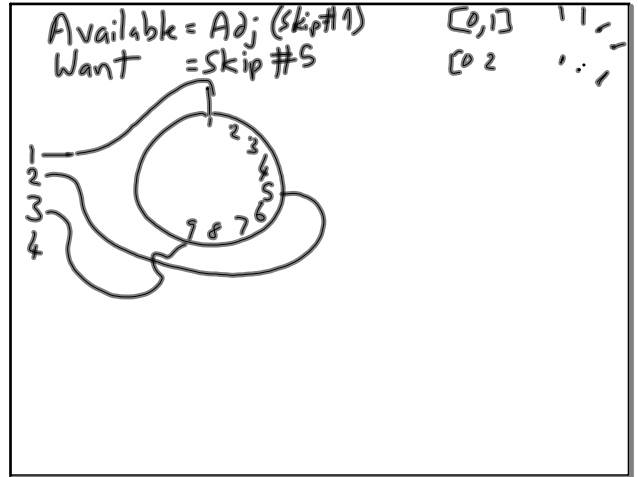
M_k -stim-patterns (16, [0,7], [0,7], {3}, 1)

stim meas

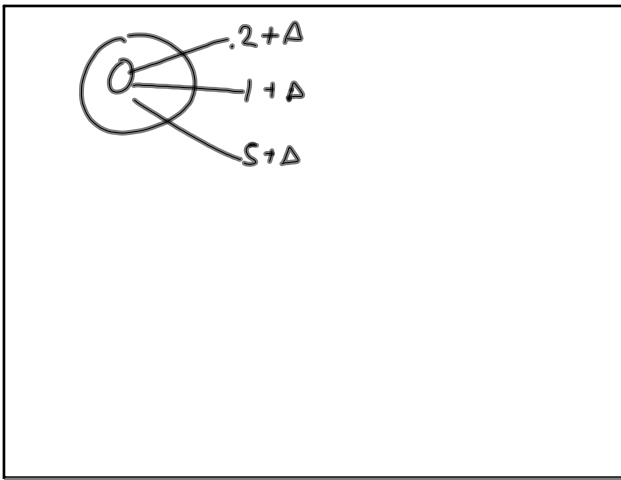
Apr 20-10:16

Sensitivity 2D vs 3D
 Stim Patterns - adjacent vs "skip"
 Moving Electrodes
 Current Patterns
 Background

Apr 20-10:16



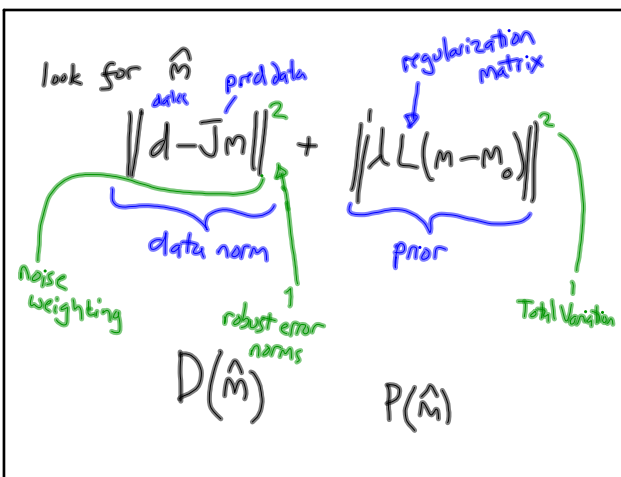
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Apr 20-10:16

Image Reconstruction
 - Look at Raw Data!
 -
 Adj $16 \times (16-3) = 208$

Apr 20-10:16

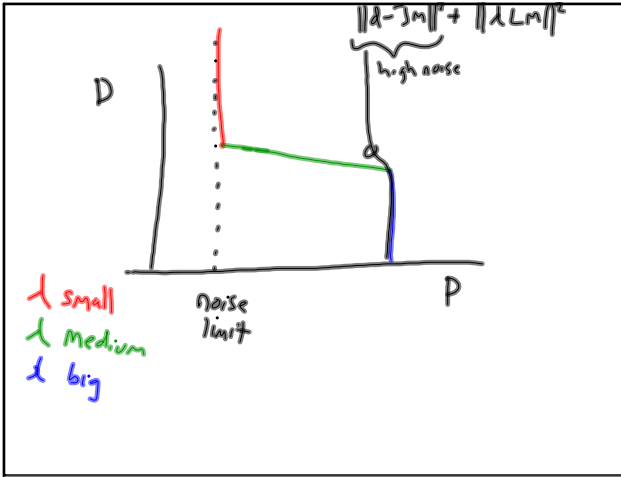


Apr 20-10:16

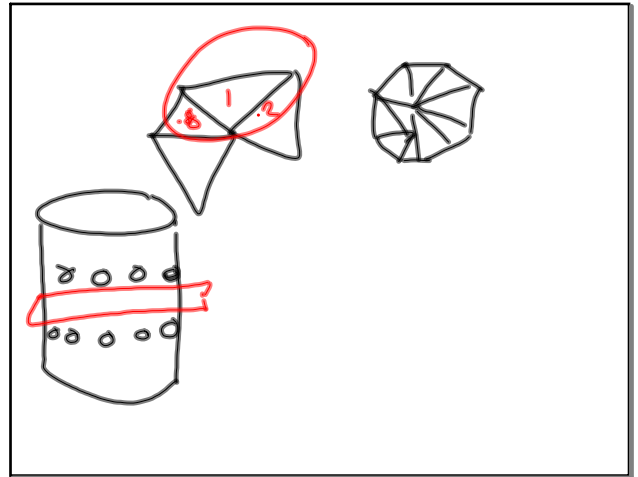
$+ \|\lambda L(m - m_0)\|^2$ R_{prior}

$+ \lambda L^T L \|m - m_0\|^2$ $R_{\text{R-prior}}$

Apr 20-10:16



Apr 20-10:16



Apr 20-10:16

TODO
 ng_write_opt() fails
 keyboard in mesh generation
 logic & physics -> finite model process
 Not time -> 2ms

Apr 20-16:32

Plan
 - eidors svn
 - software arch
 - UNIT_TEST
 - resistor model

R

Apr 21-08:43

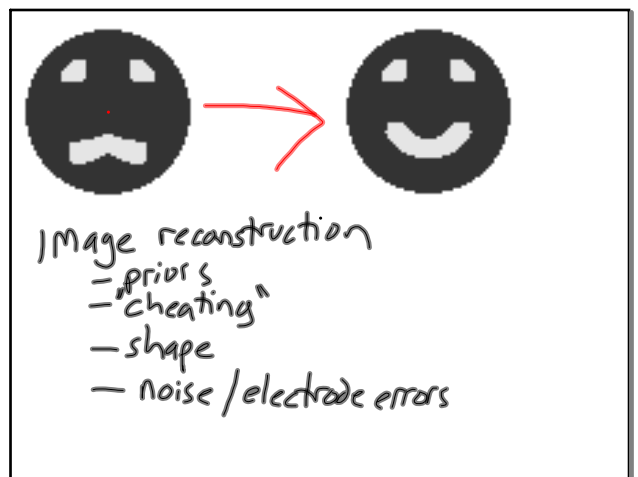
- resistor model

$$R = \frac{L}{A\sigma} + 2Z_c$$

3D $\rho = \Omega \cdot m$ $R = \rho \frac{L}{A}$


2D $\rho = \Omega$ $R = \rho \frac{L}{w}$

Apr 21-09:18



Apr 21-08:43

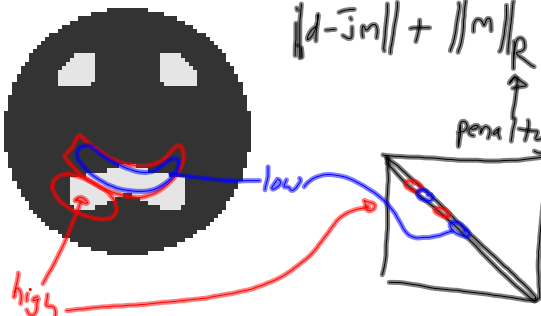
EIT + SNR
 SNR of 80dB
 .. of 0dB

Signal = $\|V\|^2$ 
 $= \|V - V_r\|^2$
 $< \| (V - V_r) \text{diag}(V_r)^{-1} \|^2$

Apr 21-09:53

$\|d - \tilde{J}m\| + \|m\|_R$

penalty



Apr 21-09:45

- GREIT
 - Dual Models
 - absolute solvers
 - swisston tank
- L curve

Apr 21-08:43


Read Data
 eidors_readdata
 (OEIT)
 DATA → OEIT → read (3.8) ×

Apr 21-08:43

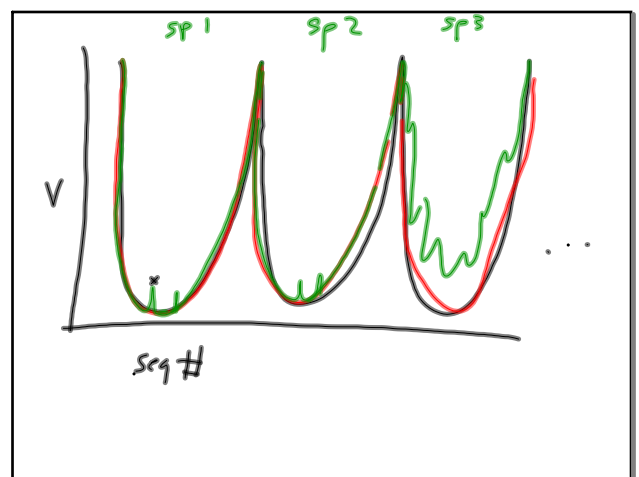
$f_{mdl} = \text{---}$
 $f_{mdl.stimulation} = \text{---}$

① $indl = \text{select_indl}(f_{mdl}, \{features\})$
 $indl.mn = mn$
 $rec_model = \dots$

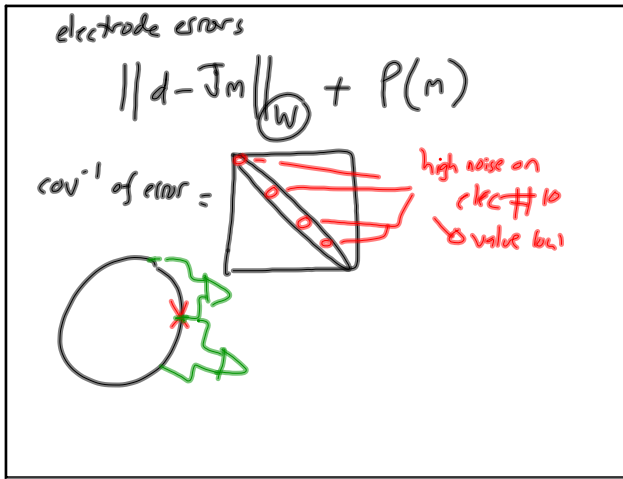
② $indl = \text{mk_GREIT_} \dots$



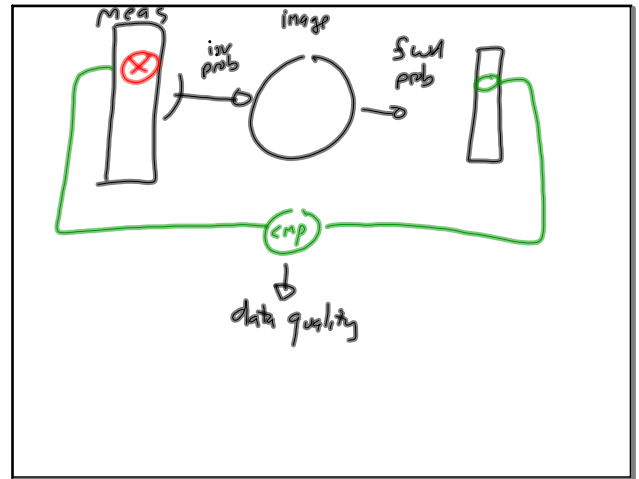
Apr 21-11:35



Apr 21-11:39



Apr 21-11:54



Apr 21-12:16

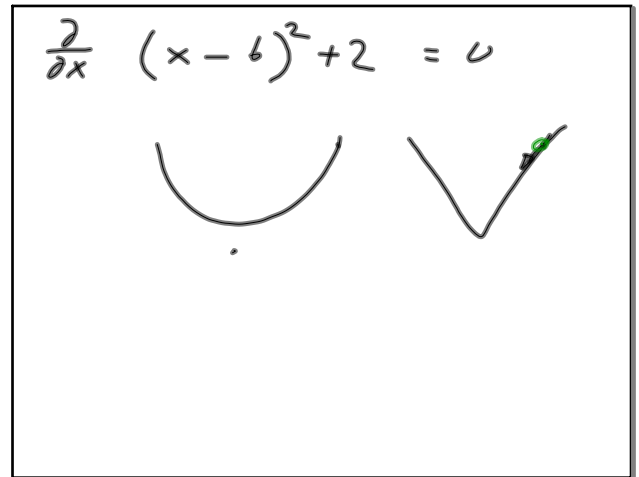
Robust Error Norms

$$\|d\|_{1,2} + \|i\|_{1,2}$$

2,2 - linear
 data 1 - robust error norms
 image 1 - TV

PDIPM

Apr 21-13:57



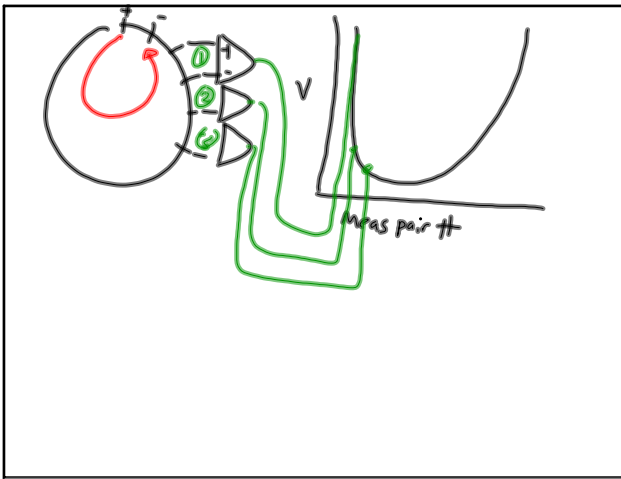
Apr 21-14:13

$$a_1 \|d\|_1 + a_2 \|d\|_2^2$$

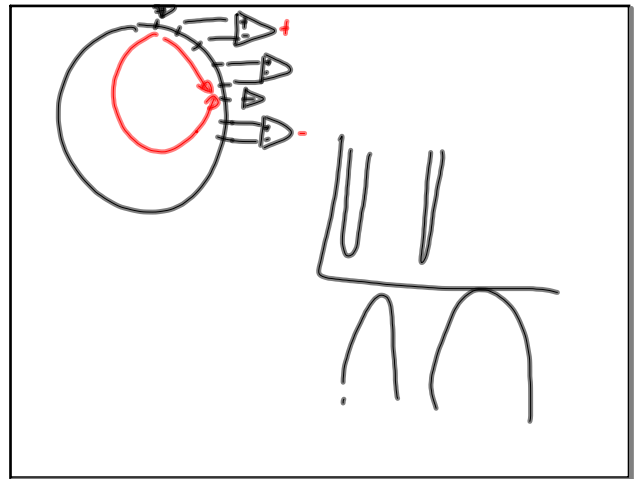
Apr 21-14:16

- Jacobian backgrd
- Dual Models
- Abs solvers
-

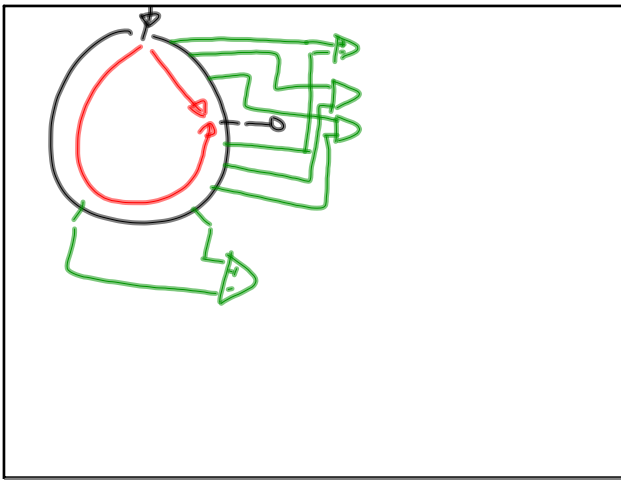
Apr 21-14:49



Apr 21-11:40



Apr 21-11:42

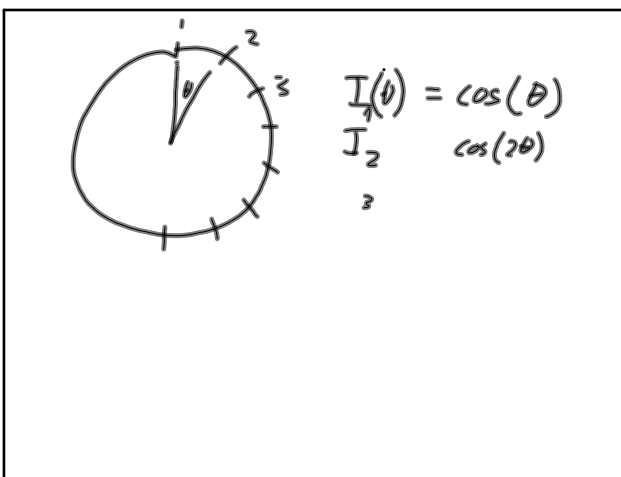


Apr 21-11:46

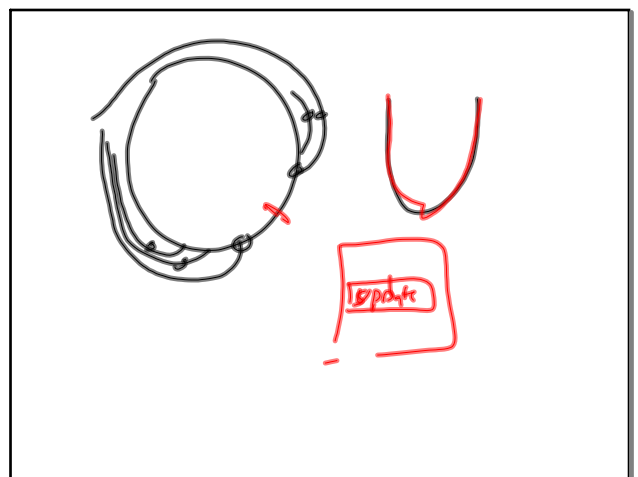
bugs

- display-meas - 2D
- warn if ignore imag data
- why complex btnd?

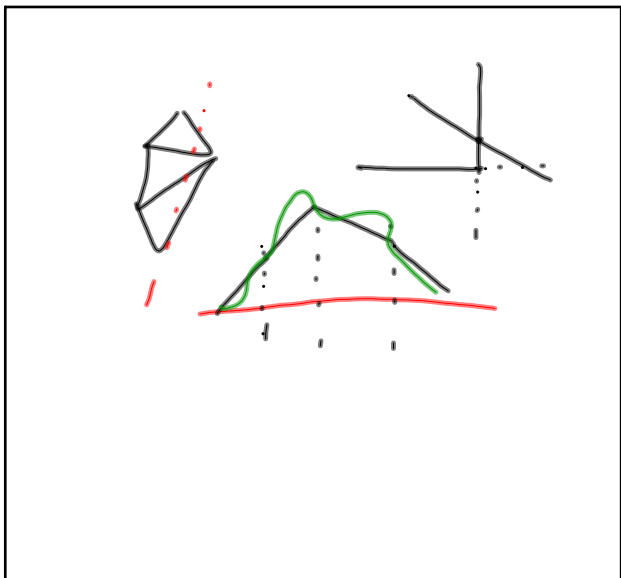
Apr 21-11:56



Apr 21-15:24



Apr 21-15:57



Apr 21-16:03