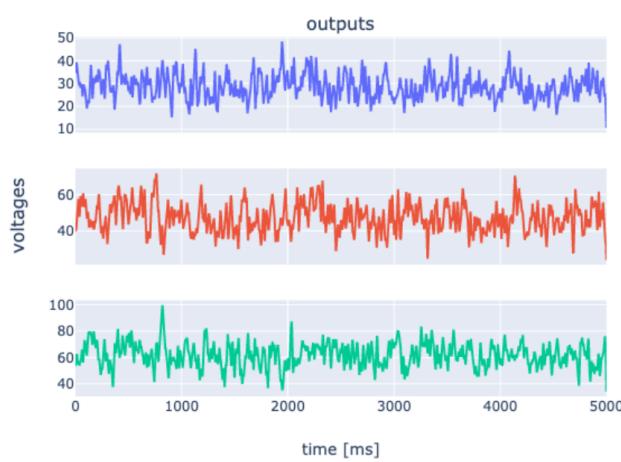


Insert these figures somewhere

Refine these figures 🚧

1. Aggregating network data

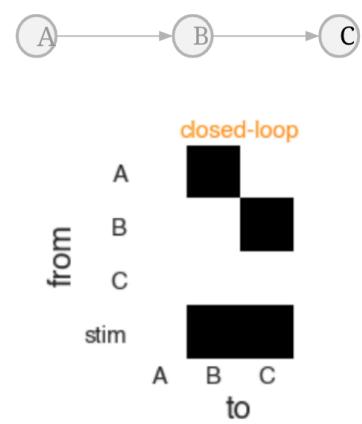


2. Extracting co-dependence



3. Thresholding, statistical tests

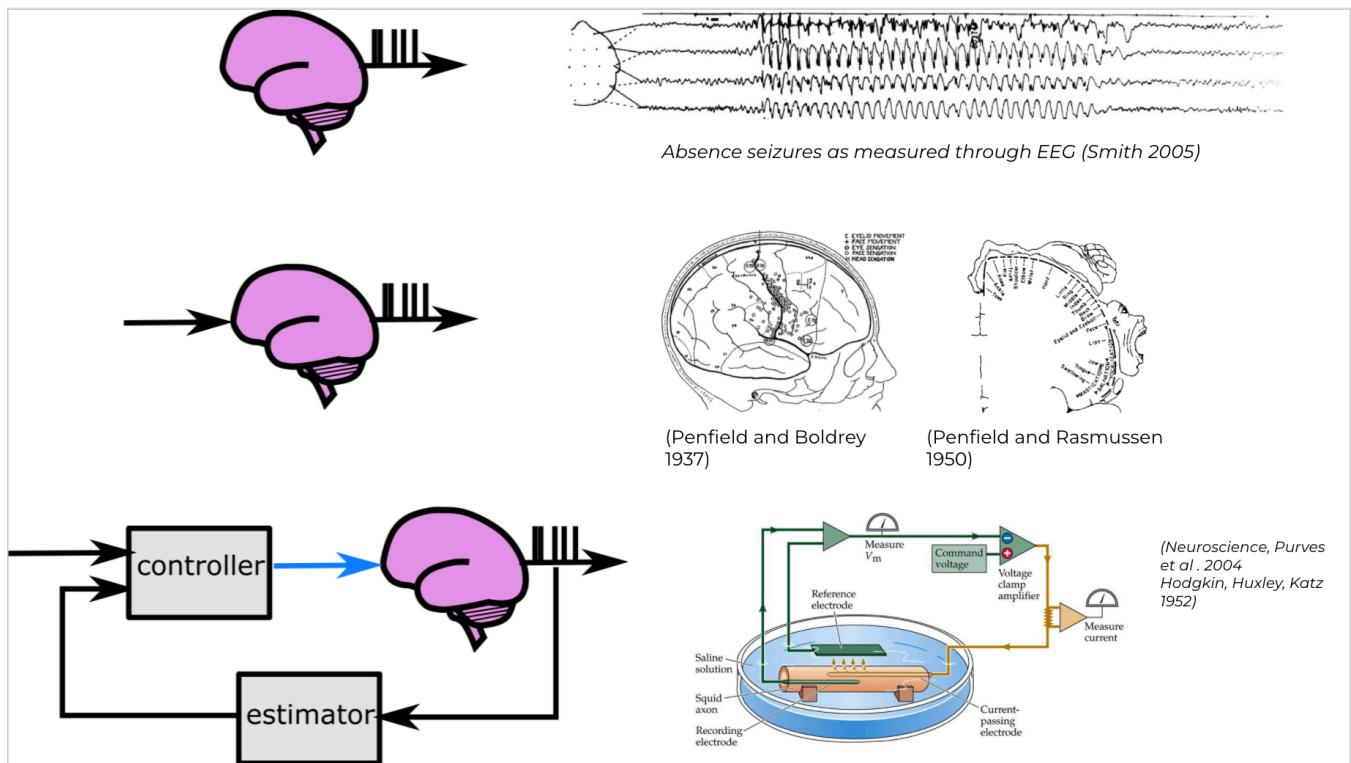
Network Estimate



*Cross-correlation
OR
Multivariate
transfer entropy*

Intro

Interventions in Neuro



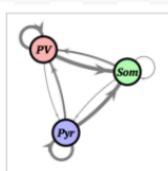
- merge into causal diagram?
- might be cut if the paper ends up being less

clean up

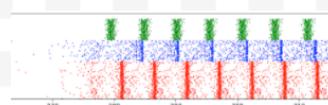
2a.) Methods overview

(goal: introduce language of graphs, adj matrices, dynamical systems, interventions)

A. Circuit view



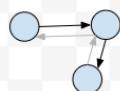
Data



Point 1.)
"All of these are related"

B. Dynamical systems view

$$\begin{bmatrix} \dot{x}_A \\ \dot{x}_B \\ \dot{x}_C \end{bmatrix} = \begin{bmatrix} w_{AA} & w_{AB} & w_{AC} \\ w_{BA} & w_{BB} & w_{BC} \\ w_{CA} & w_{CB} & w_{CC} \end{bmatrix} \begin{bmatrix} x_A \\ x_B \\ x_C \end{bmatrix}$$



Point 2a.) From the adjacency matrix view we can derive reachability measures (which will be useful later)

C. Adjacency matrix view

see also

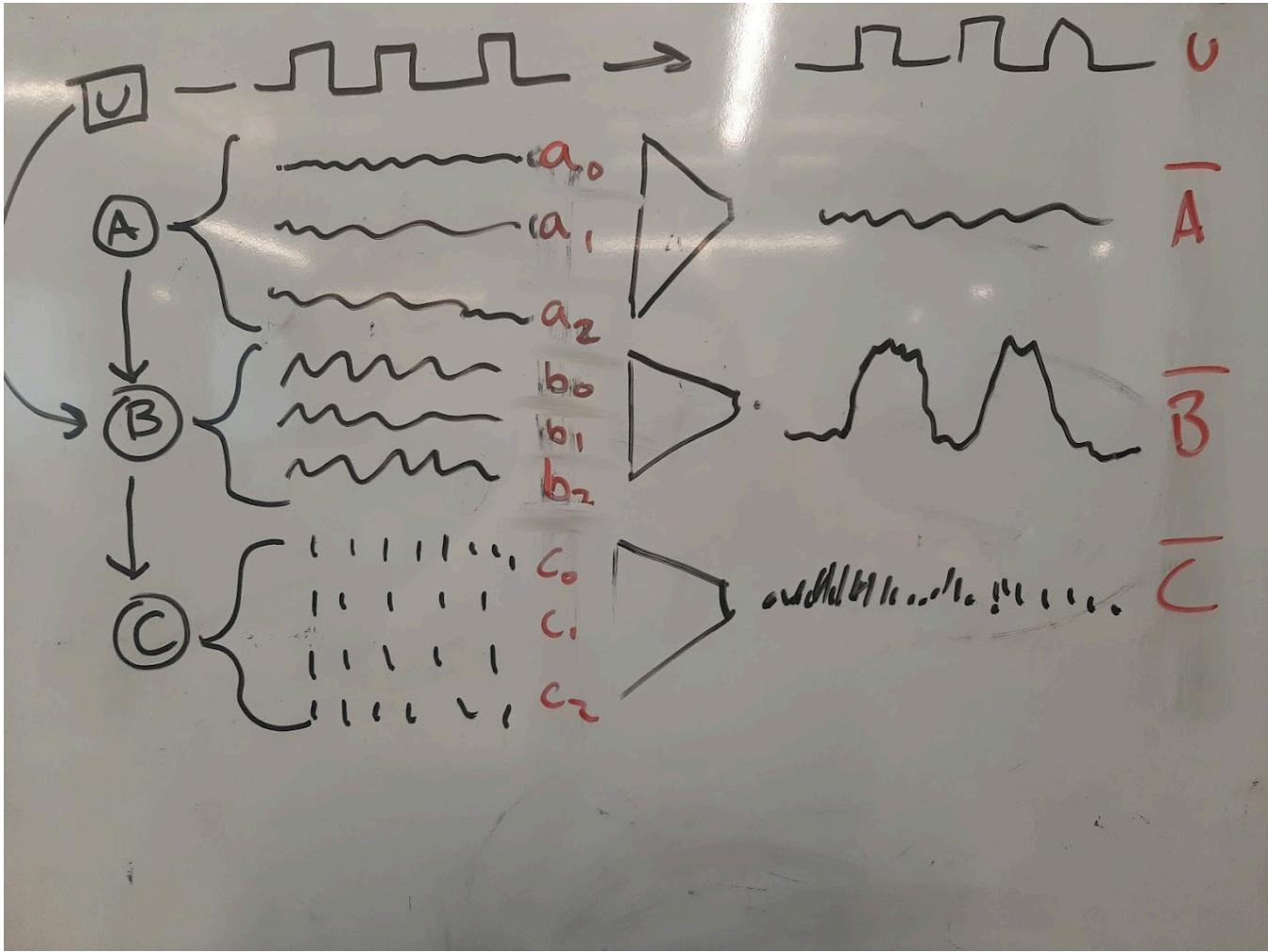


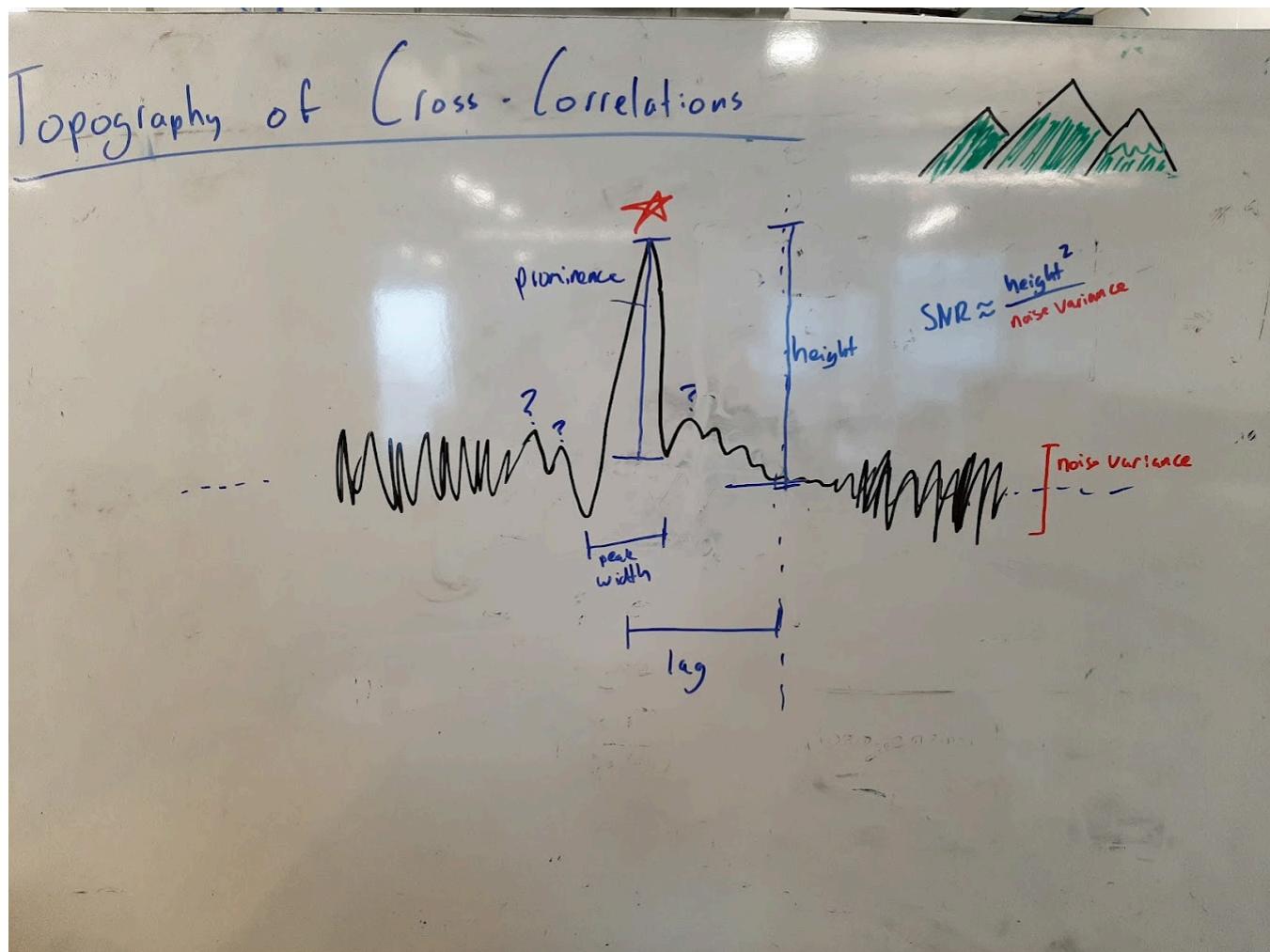
Figure DEMO: Applying CLINC to distinguish a pair of circuits (walkthrough)

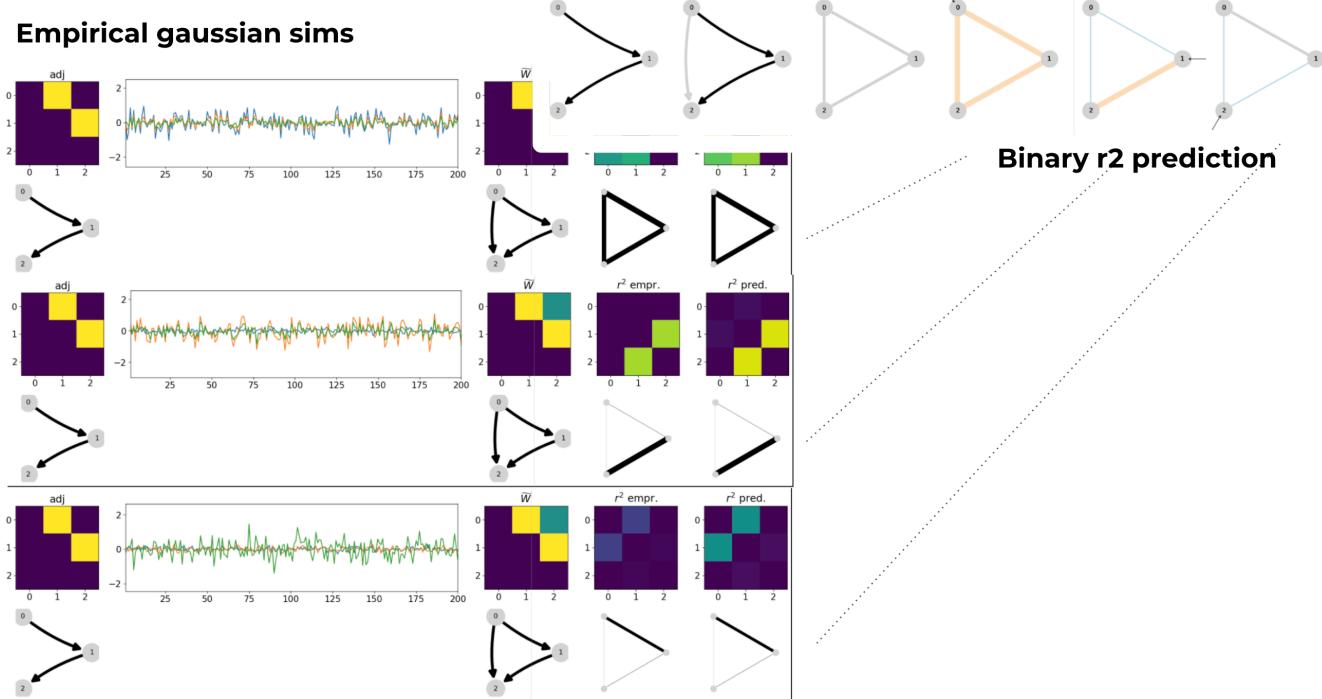
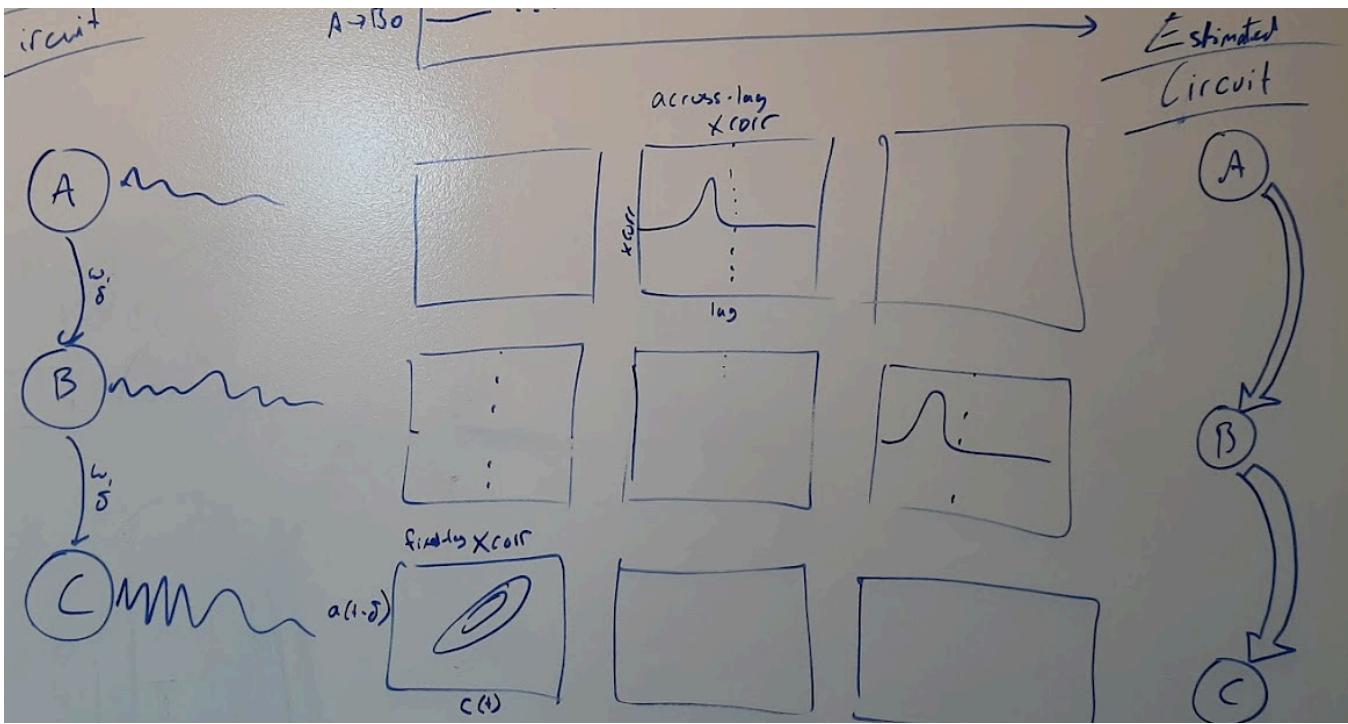
Methods

Network simulations

- something that shows neurons in networks

Extracting circuit estimates





Implementing interventions

Predicting correlation structure

Figure: illustrate reachability (skip for now)

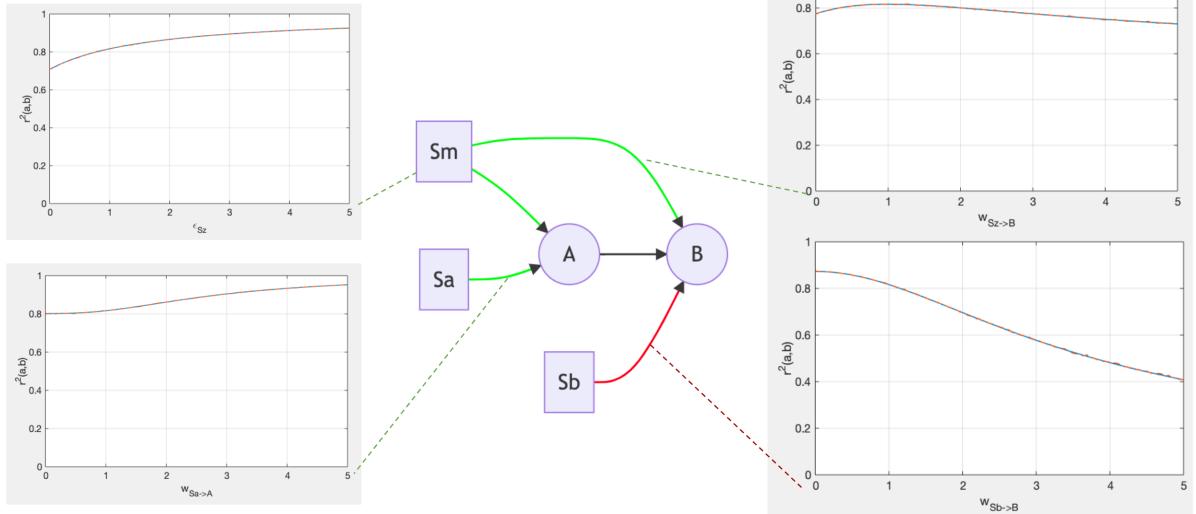
Results

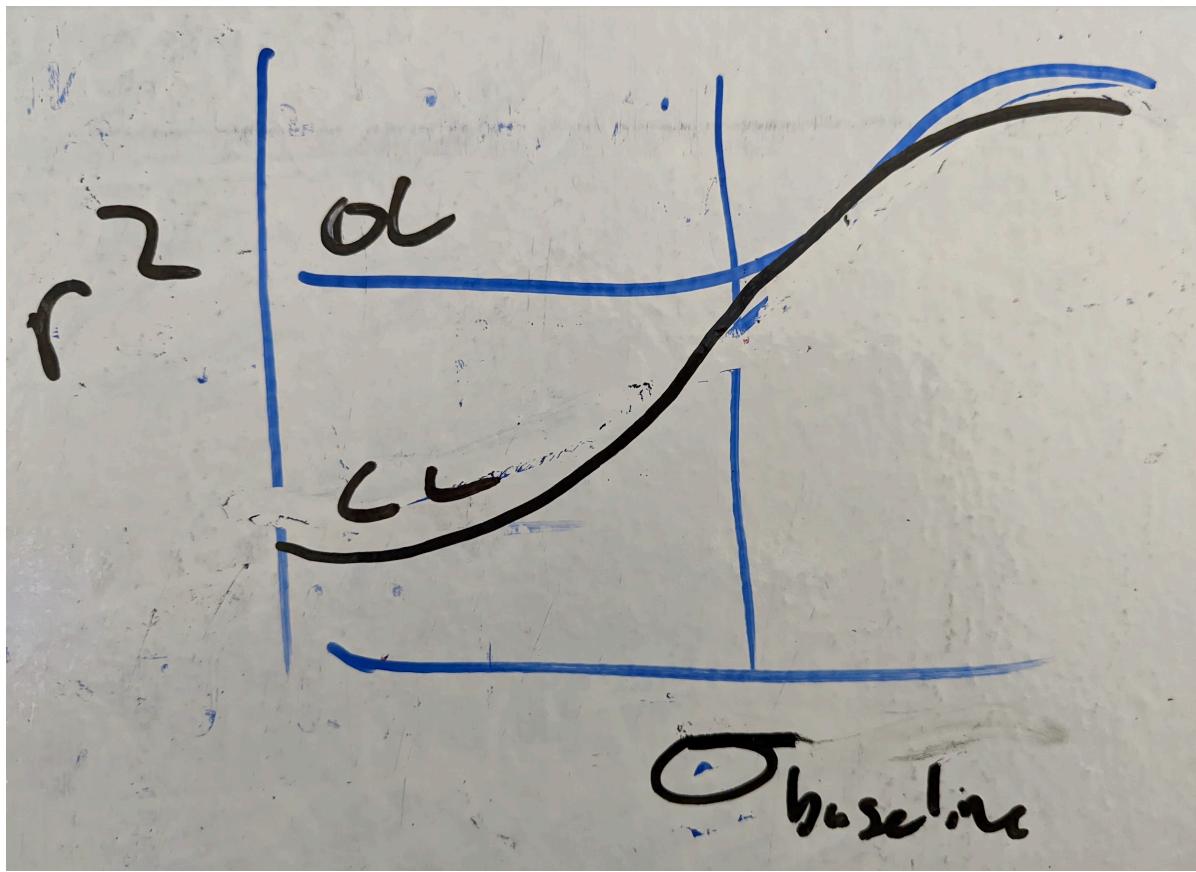
Impact of intervention

- put source variance on x-axis
- open and closed-loop loop as color, passive as dotted line

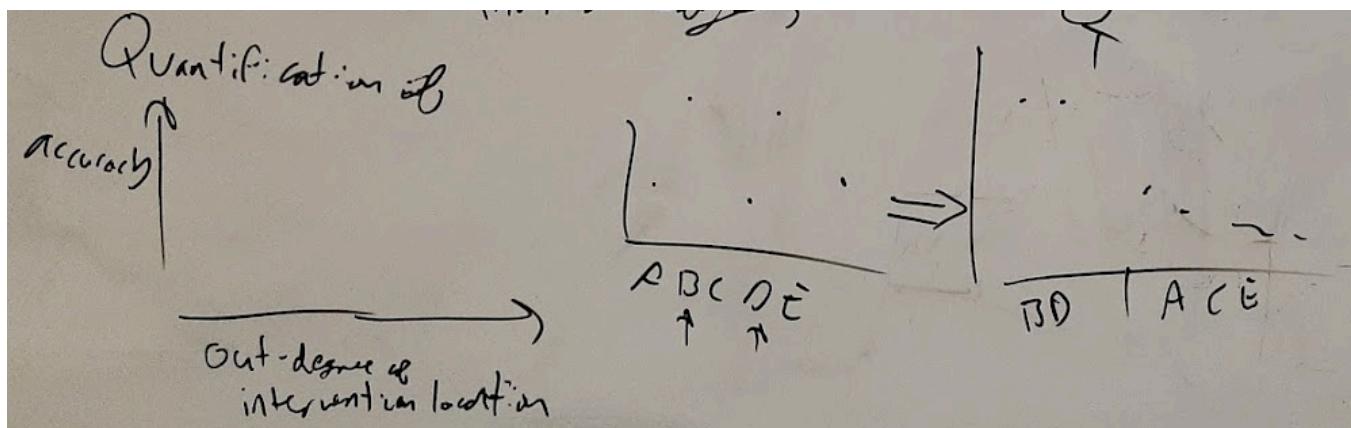
Quantitative impact of parameters

Well-predicted by ID-SNR





Impact of circuit properties



Create these figures