QUESTIONS

Are results numerically valid?
Are the results reproducible?
Are the results interpretable?
Can we learn something new from the results?
Can we answer the biological problem?

GOAL

Solve a complex biological problem

DATA CHARACTERISTICS

Data not perfect for the algorithm
a lot of noise
Only partial/no validation available

QUESTIONS

Can I use this data as an input of my model?
Are results numerically valid?
Are the results reproducible?
Are the results interpretable?
Is is giving expected result in controlled conditions?
Can we learn something new from the result?

GOAL

Demonstrate validity of the method on real data with a validation
Compare with other methods

DATA CHARACTERISTICS

Easier than in context A
Cheaper than in context A
More accessible than in context A

QUESTIONS

Are results numerically valid?
In the (almost) ideal conditions, are the results coherent?
Are the results reproducible?

GOAL

Show the model is better (faster, more accurate) than others

DATA CHARACTERISTICS

(almost) perfect for the model

C)

Mathematical theory

model

implementation

Simulated data

D)

Can it work with simulated data?

A)

Biological context A

Biological problem 1

experiment

B)

Biological context B

Biological problem 1

experiment

E)

raw real data

Cleaning
Normalization

Transformed real data

Can it work with real data?

Analysis