WP1

Path Enumeration

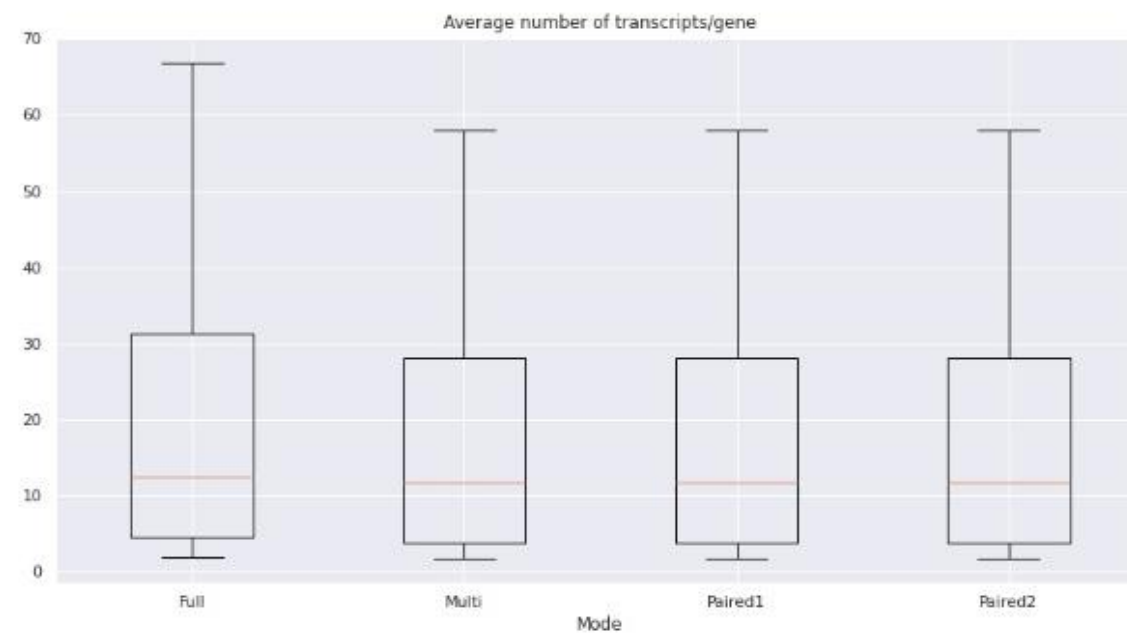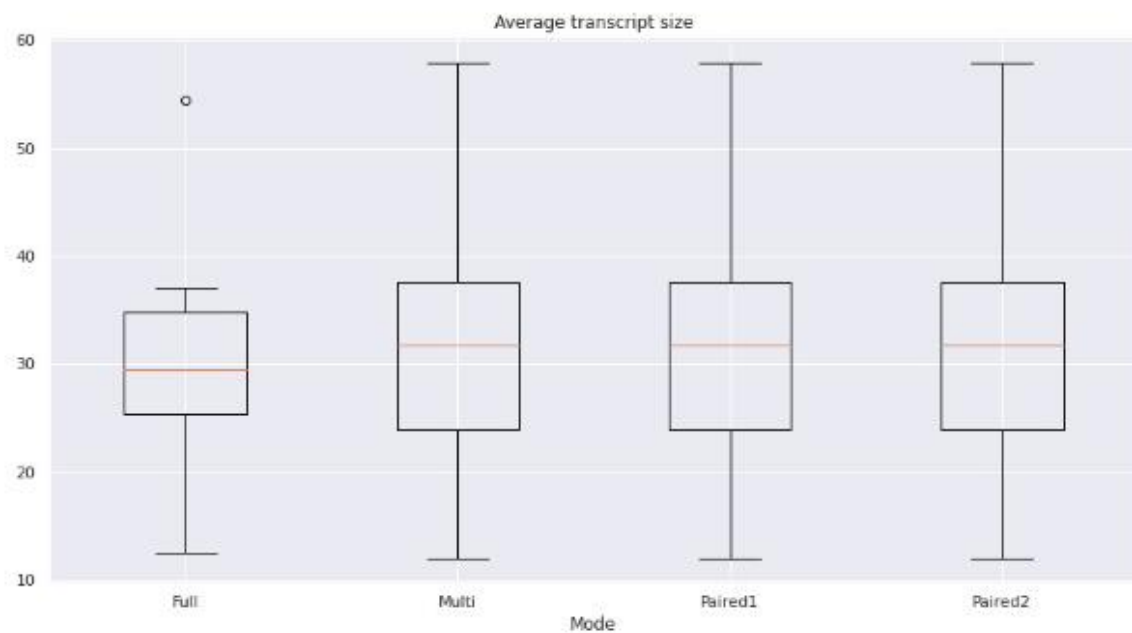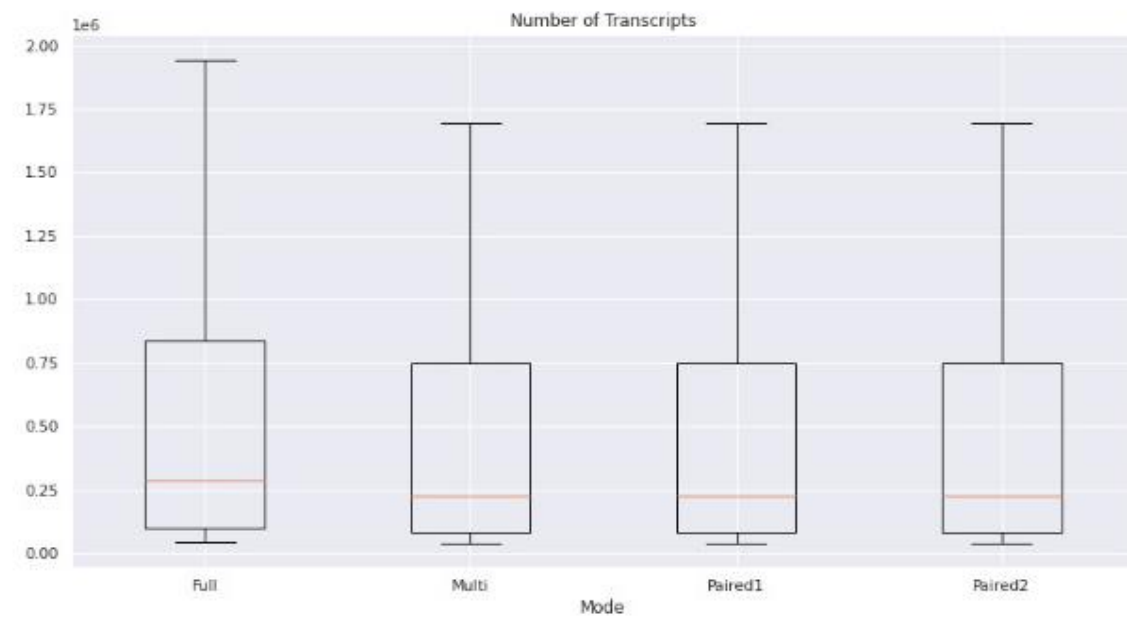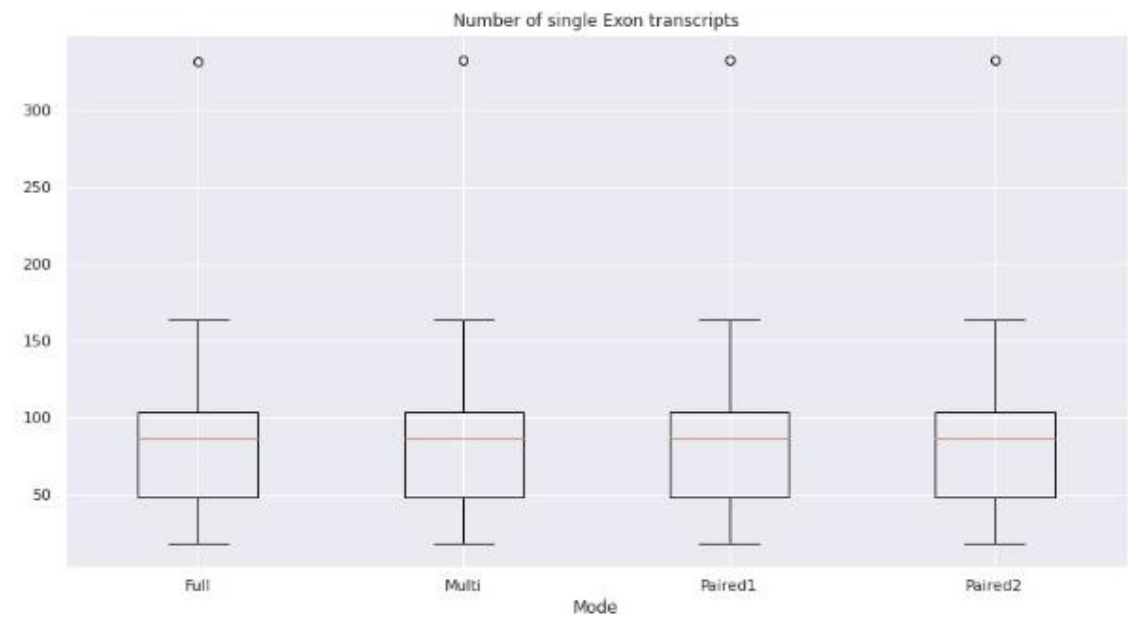# Runtime and Fraction exceeding 10k Transcripts
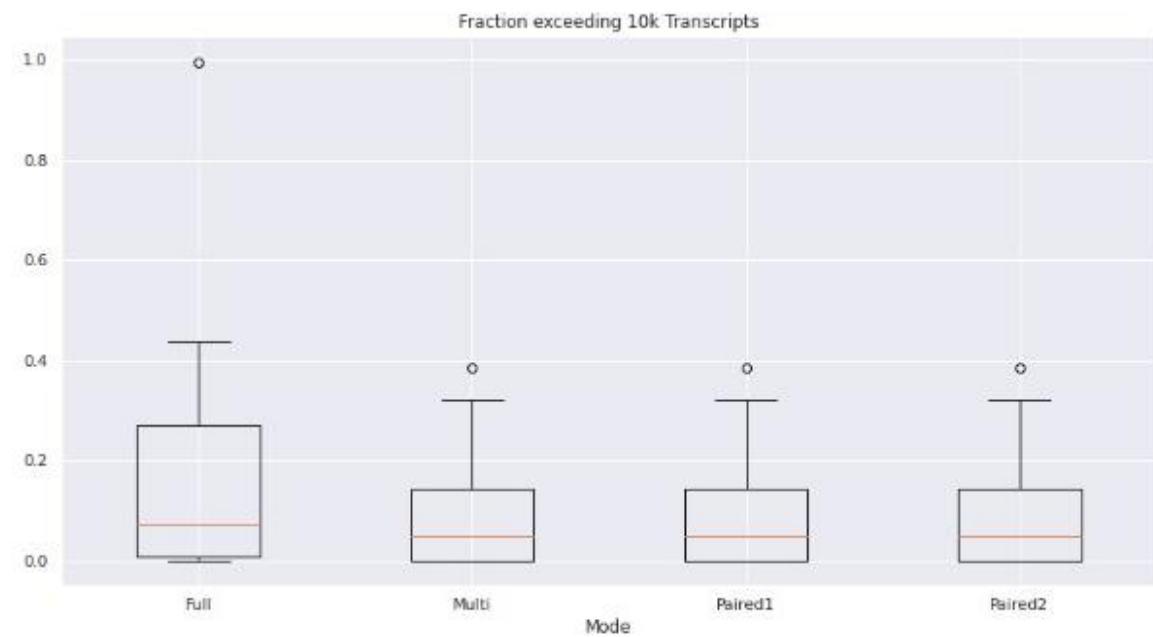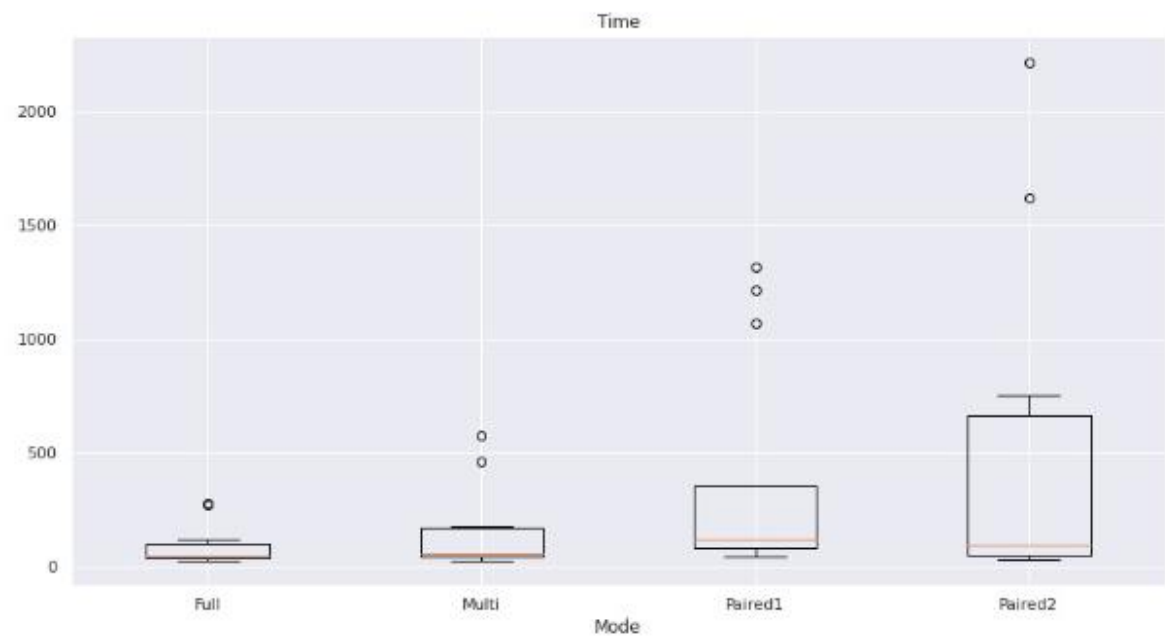
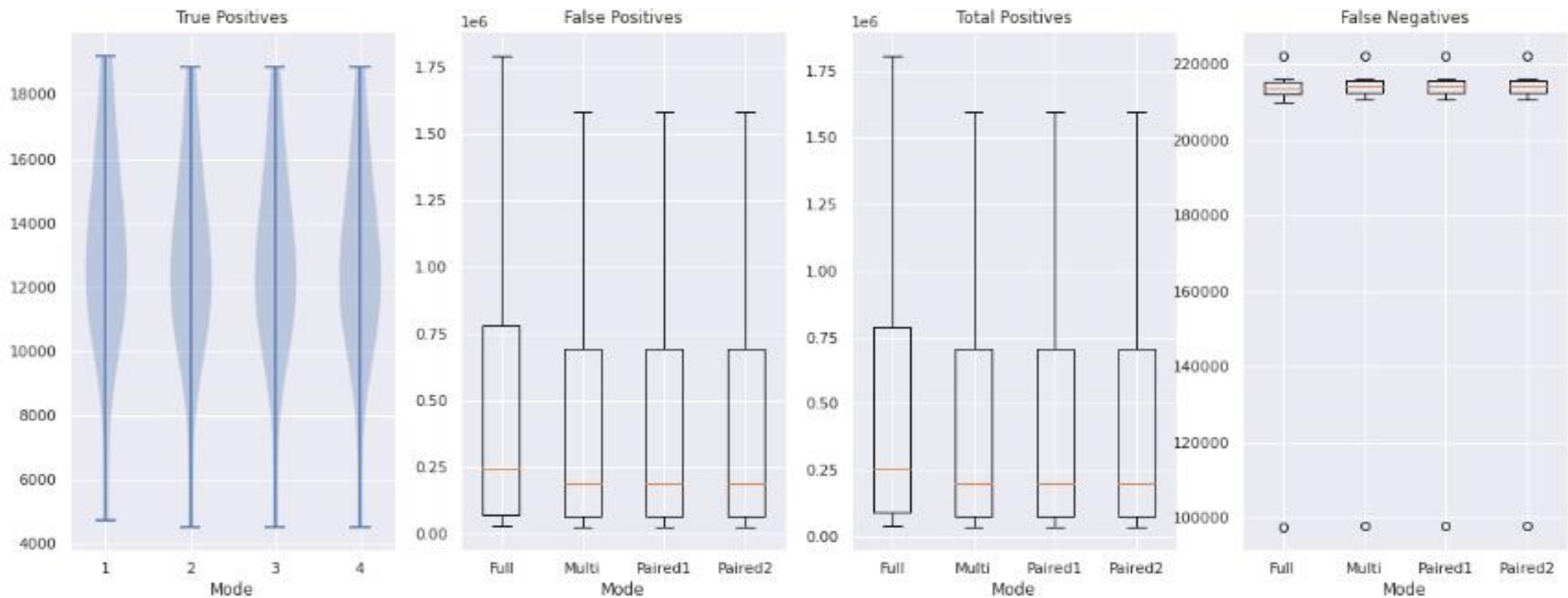# Transcript size and Transcripts per gene

Average transcript size

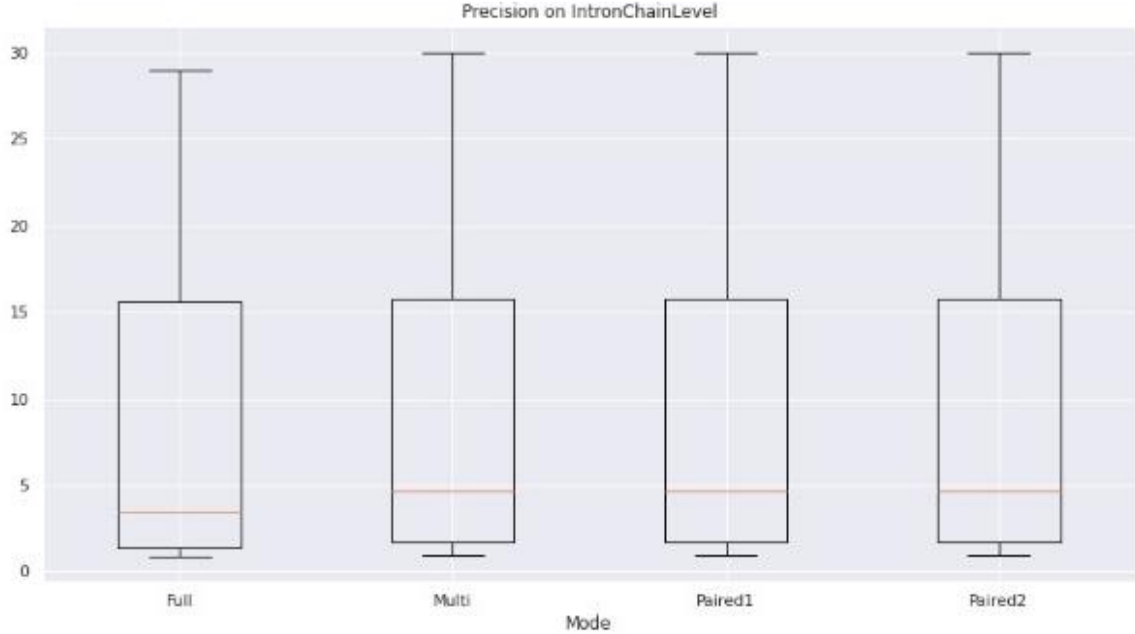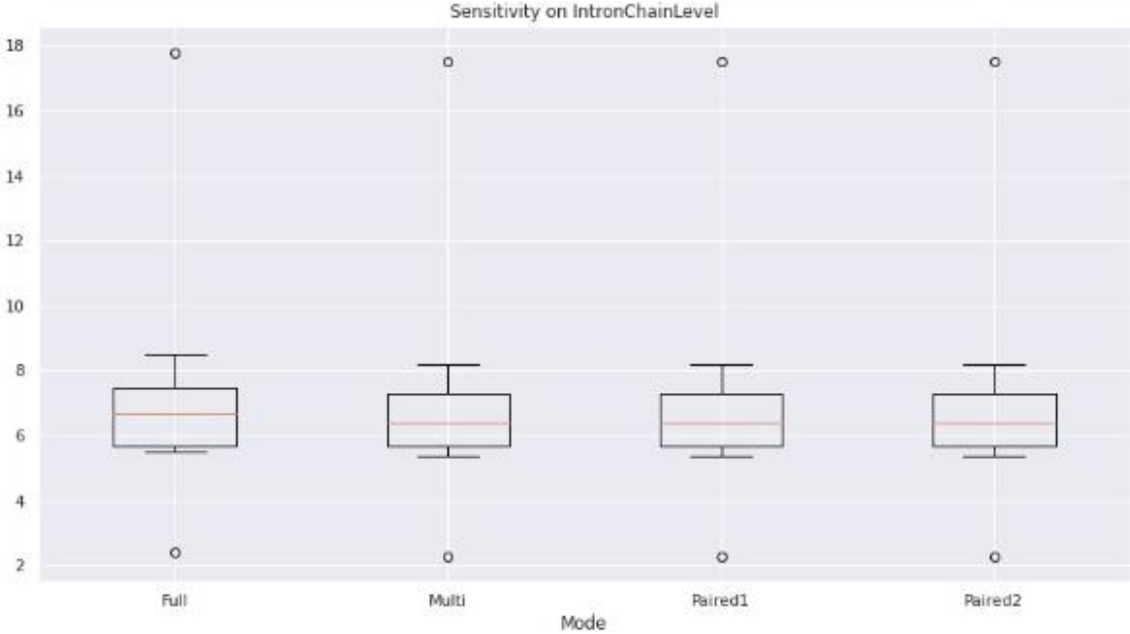Average number of transcripts/gene

Single Exon Transcripts and Number of Transcripts

Single Exon Transcripts and Number of Transcripts

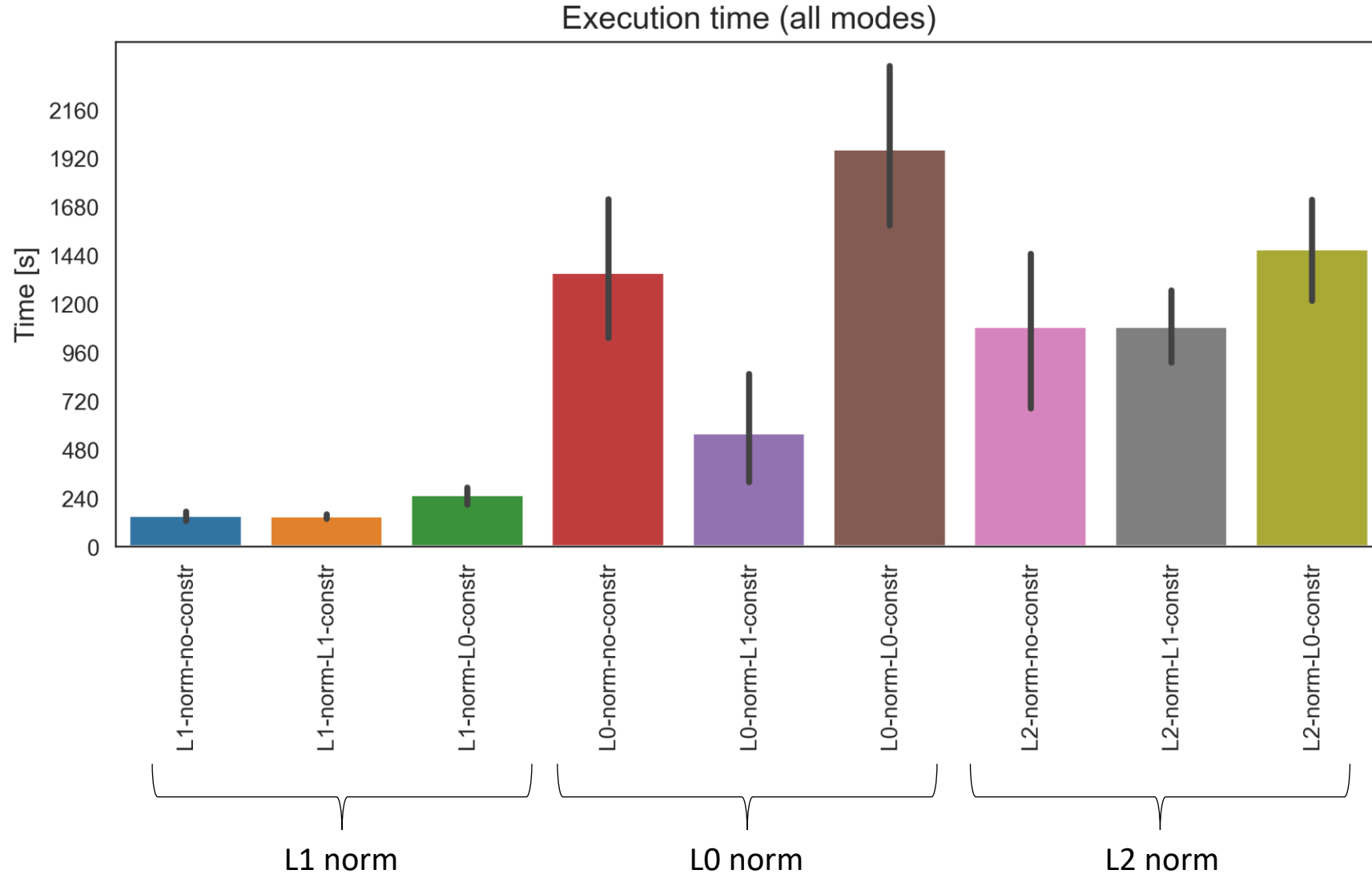# Sensitivity and Precision

Datasets:

- Human_simulated
- Human_leukemia
- Human Diverse:
  - SRR307903
  - SRR307911
  - SRR315323
  - SRR315334
  - SRR387661
  - SRR534291
  - SRR534307
  - SRR534319
  - SRR545695

WP2

Optimization with Gurobi
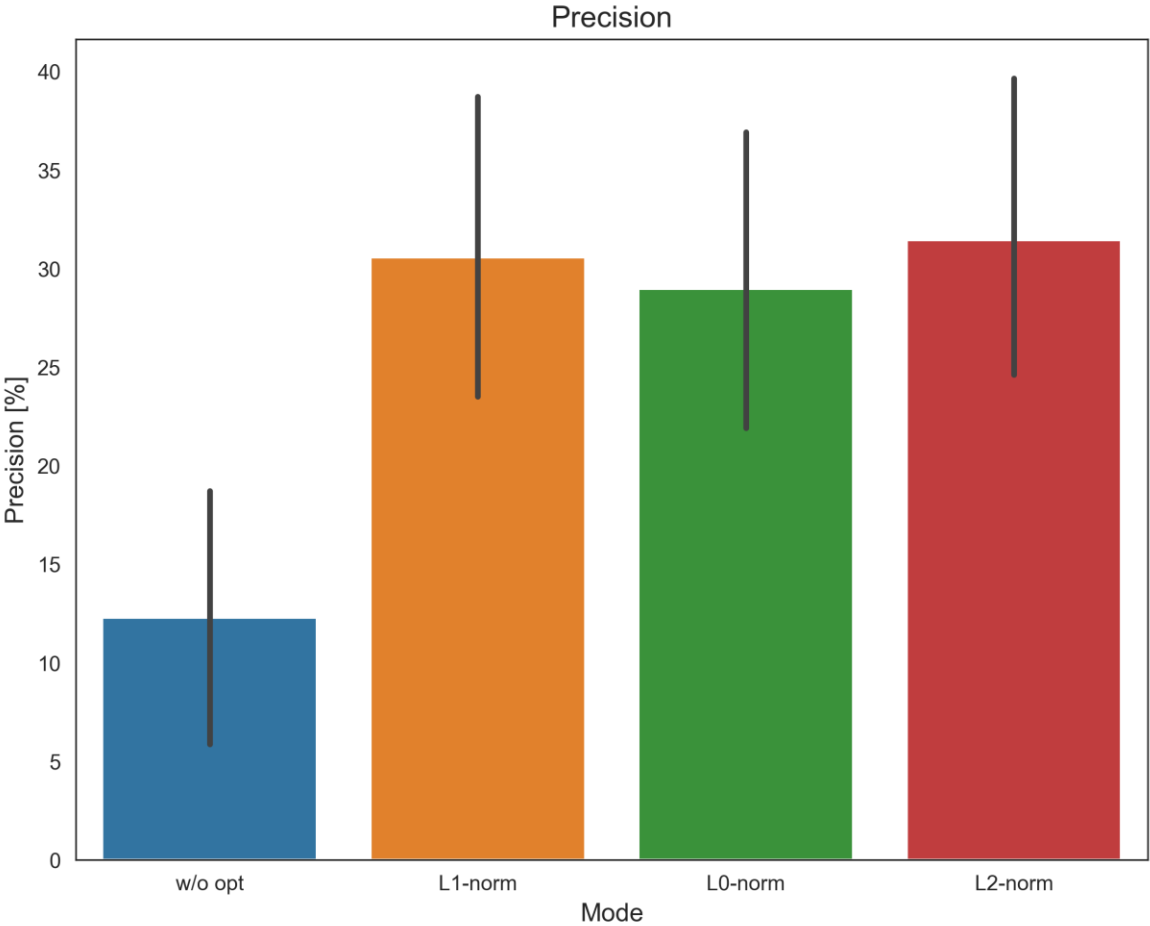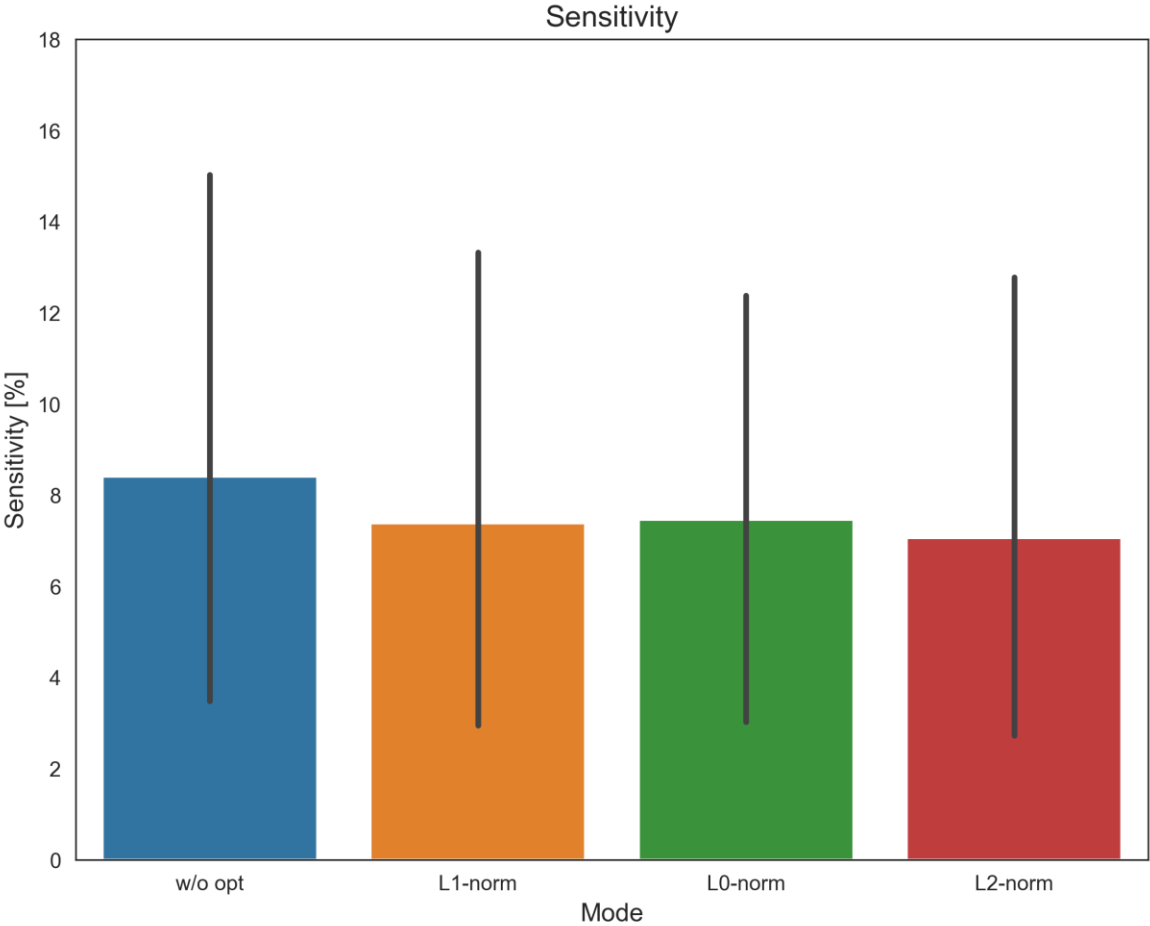
- Execution time for one graph file

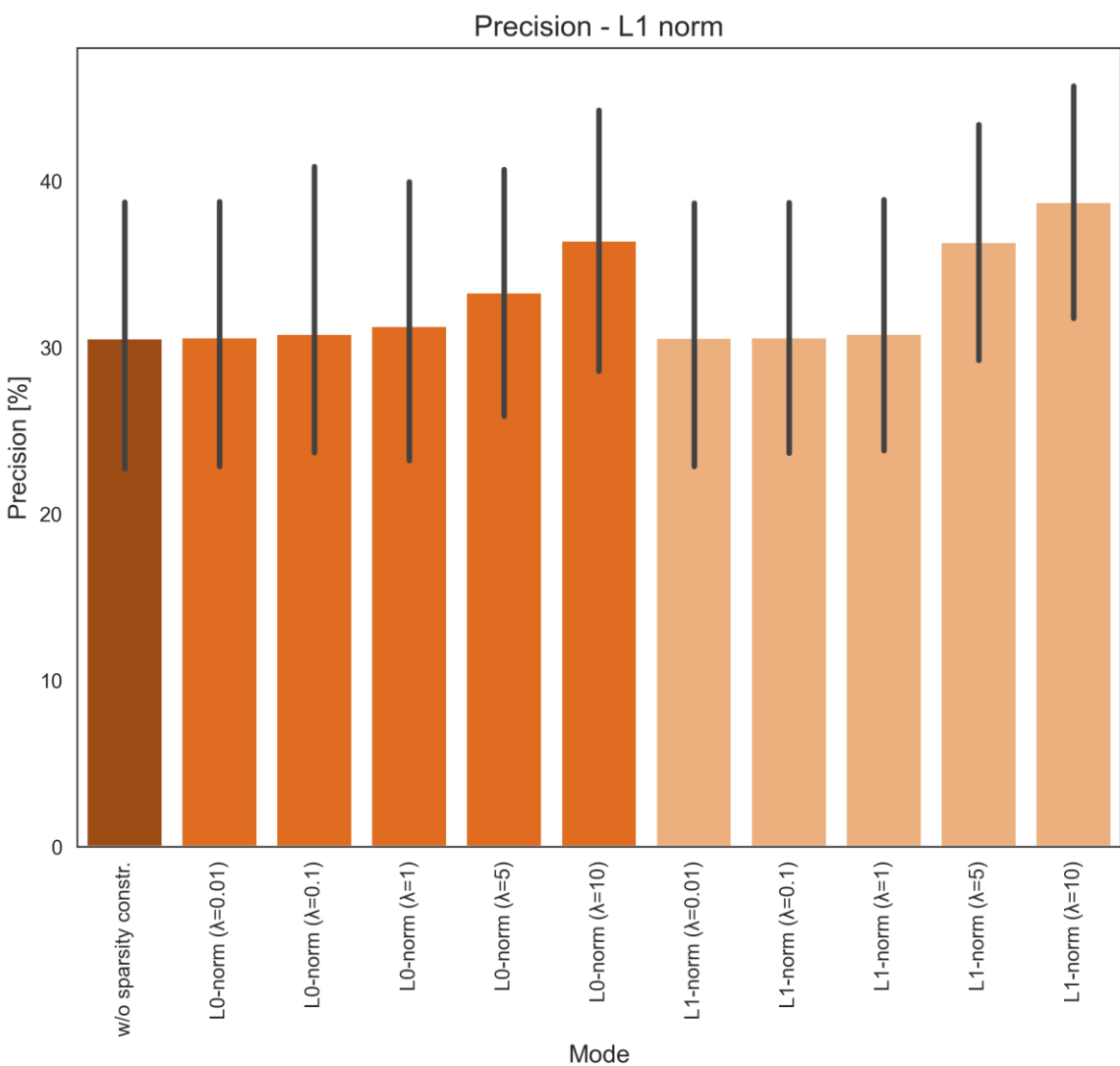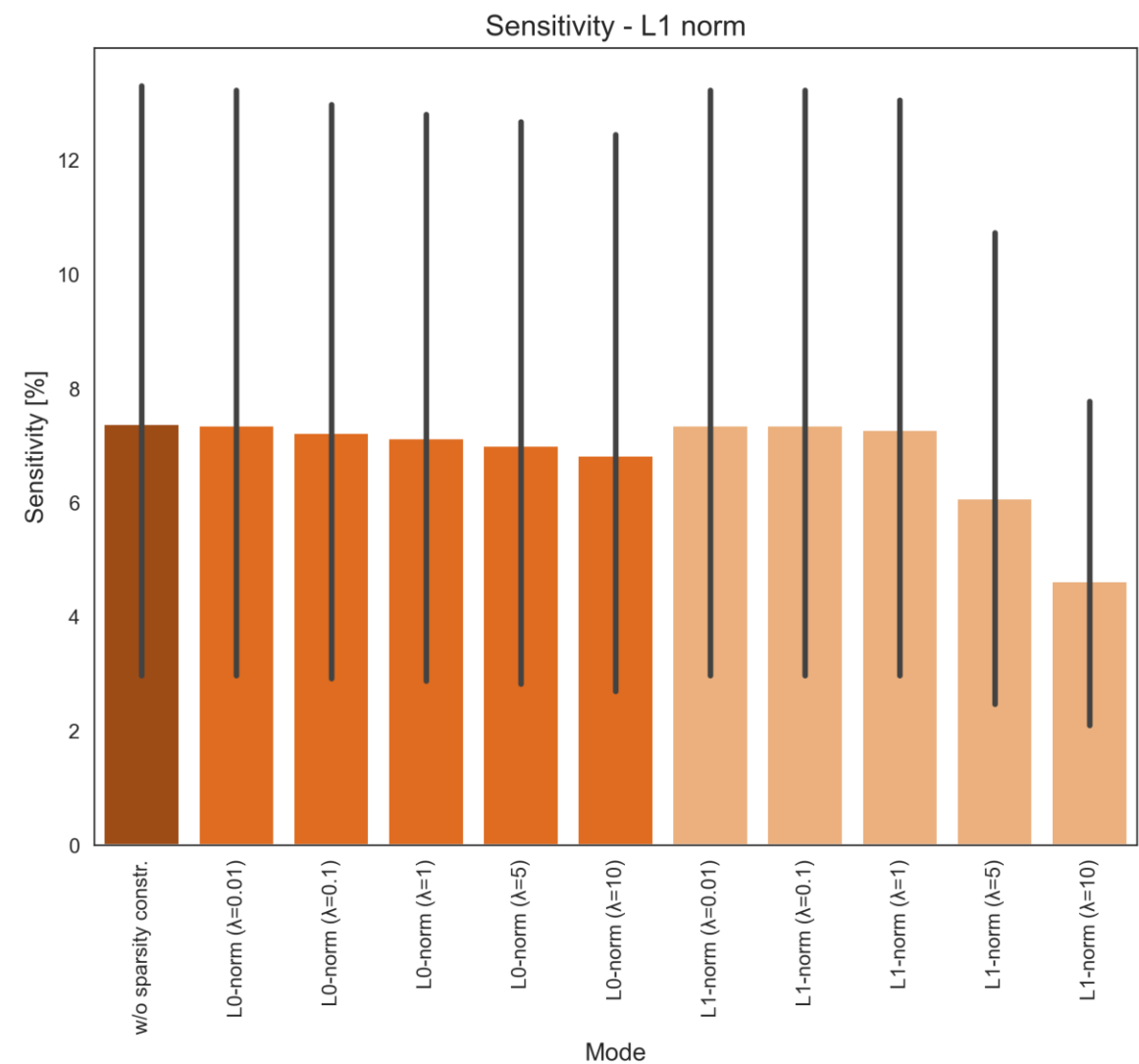Execution time (all modes)

- Full Path Enumeration

Datasets

- Human geuvadis simulated
- Human leukemia real
- Human diverse
  - SRR307903 (Fibroblasts)
  - SRR307911 (Embryonic stem cells)

- Sensitivity and Precision
- Without sparsity constraints

- Sensitivity and Precision
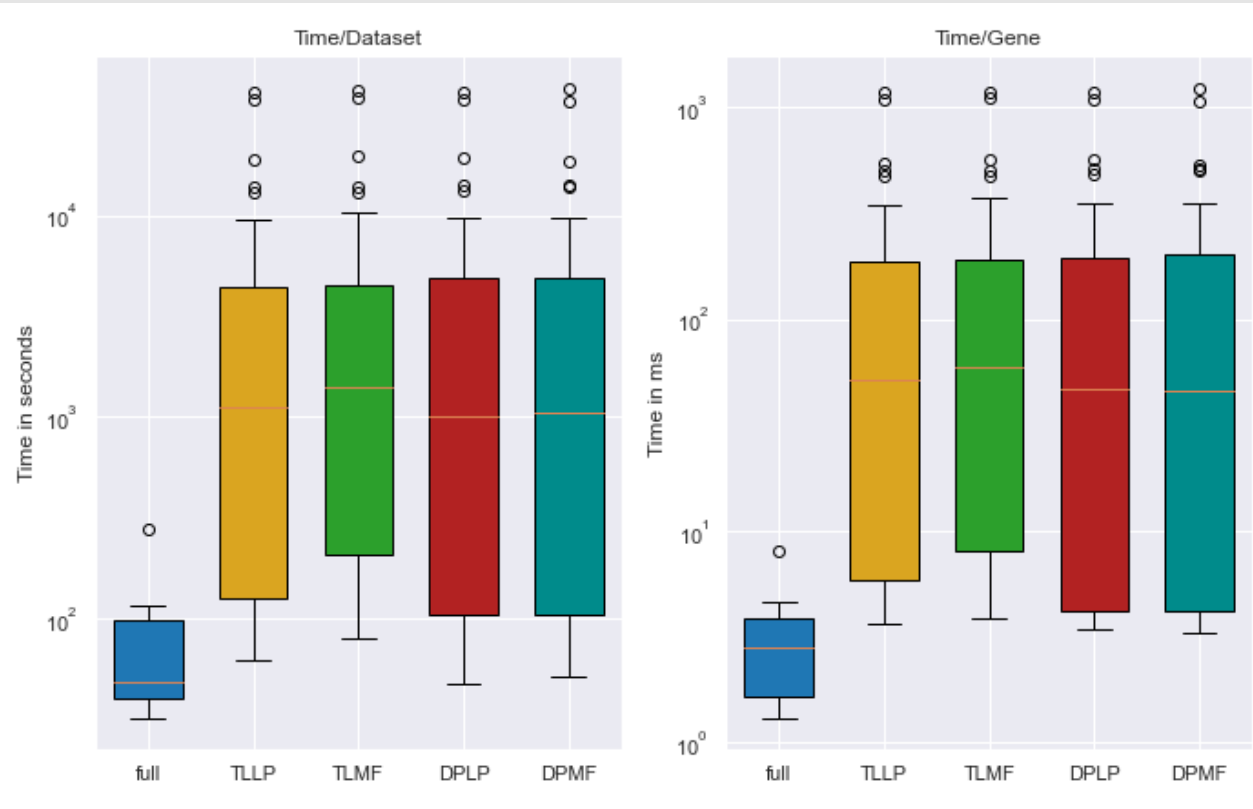- With sparsity constraints

Sensitivity - L1 norm
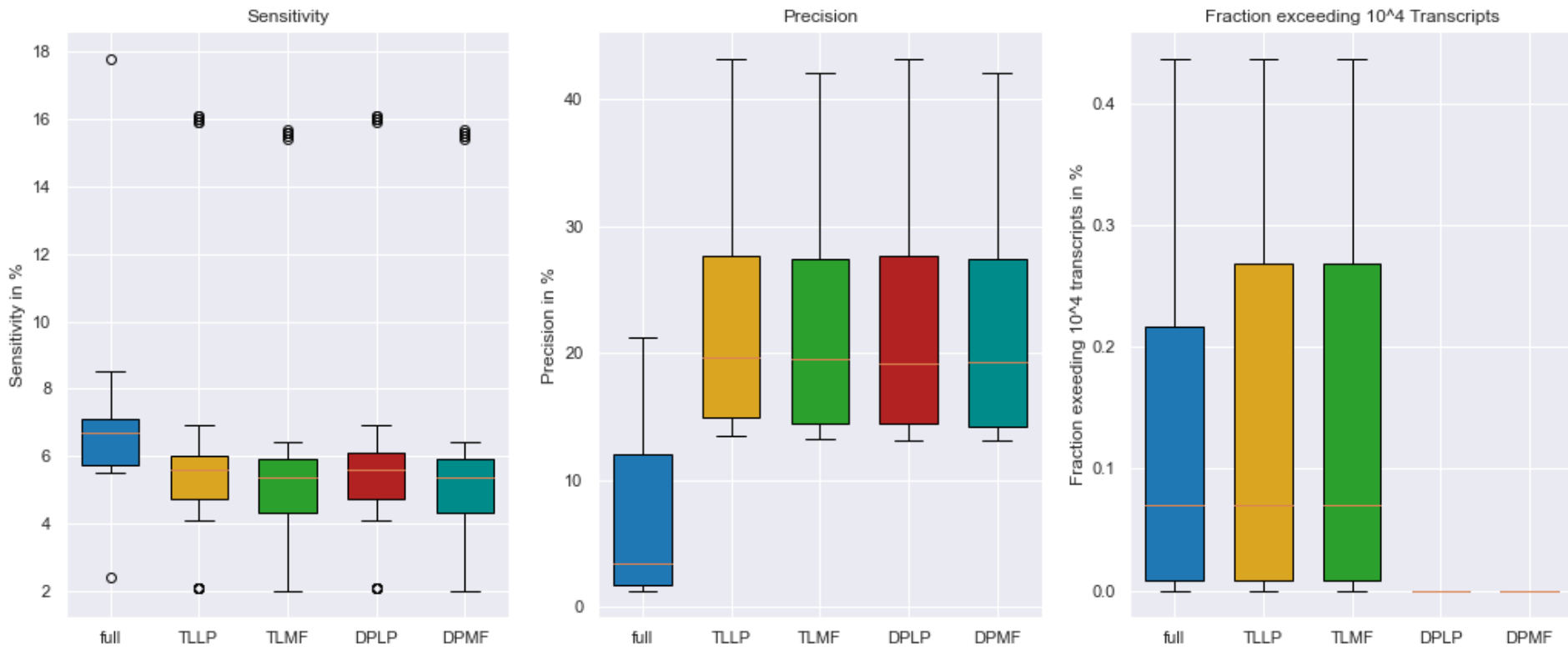
Precision - L1 norm

WP3

Flow-based Optimization

Time Analysis for flow-based Optimization
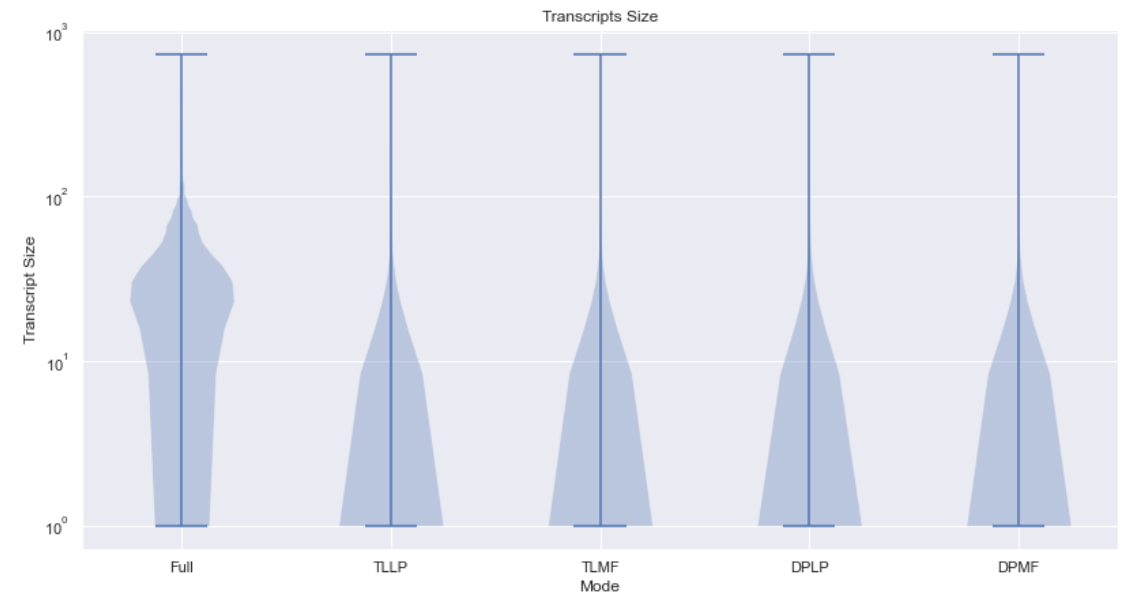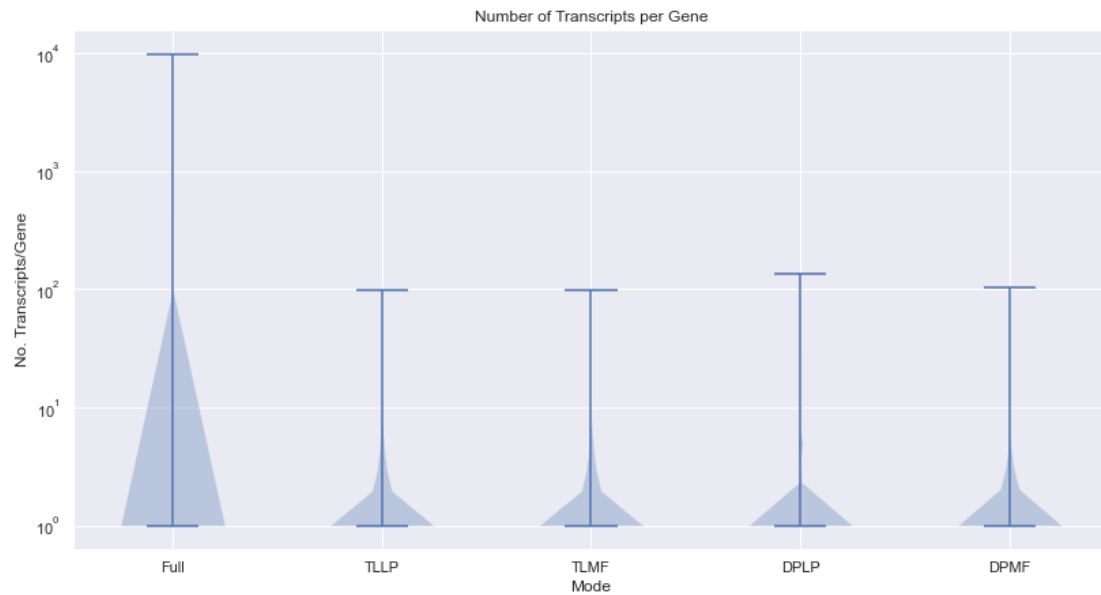

- 11 datasets:
  - Human_simulated
  - Human_leukemia
  - Human Diverse
    - SRR307903
    - SRR307911
    - SRR315323
    - SRR315334
    - SRR387661
    - SRR534291
    - SRR534307
    - SRR534319
    - SRR545695
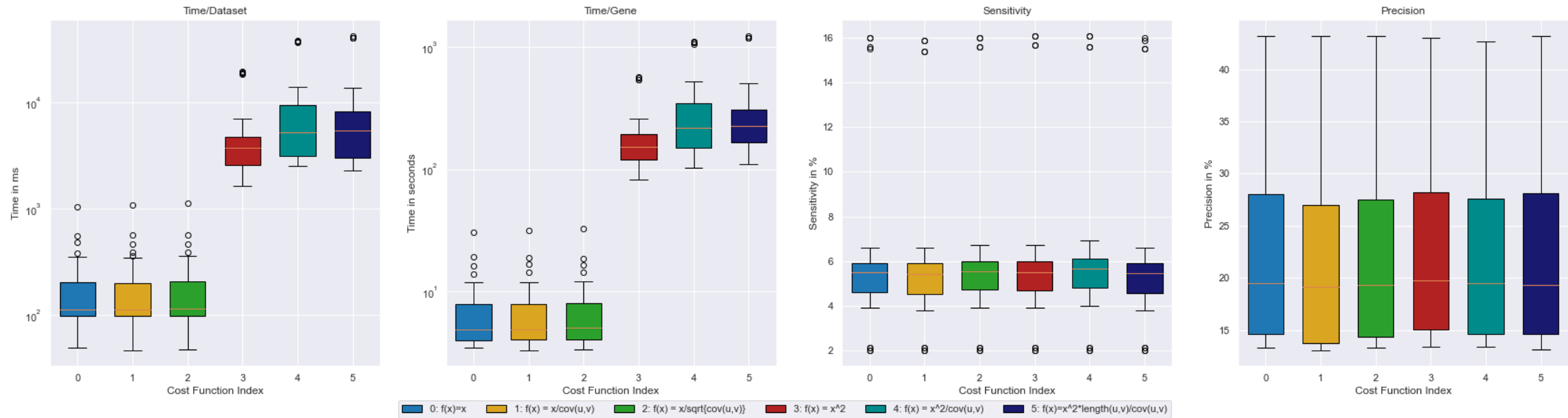- 6 cost-functions per mode
  - 3 linear
  - 3 quadratic

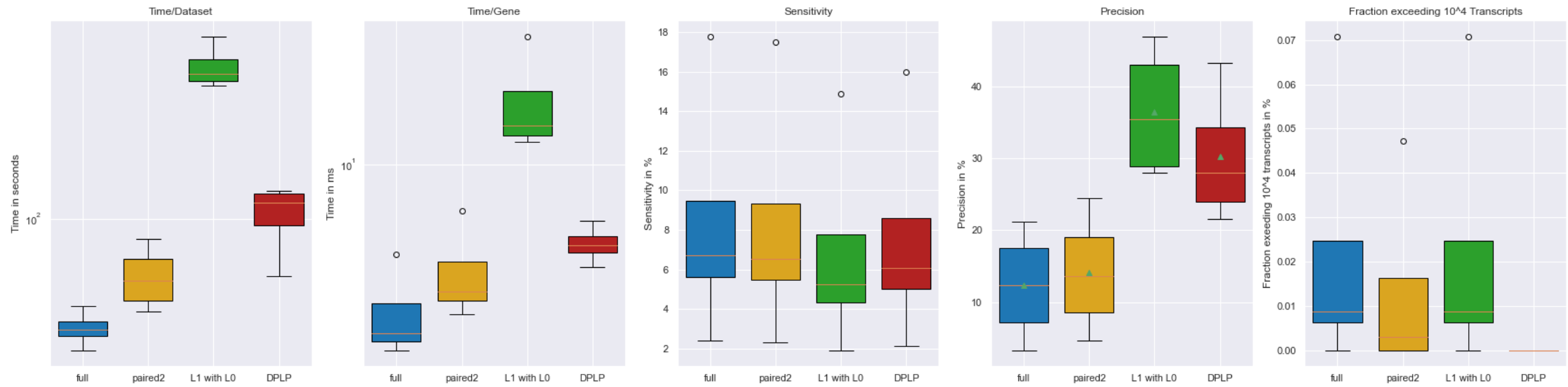# Precision and Sensitivity for flow-based Optimization

Number of Transcripts and Transcript Size for flow-based Optimization

Cost-function dependent results
for flow-based Optimization
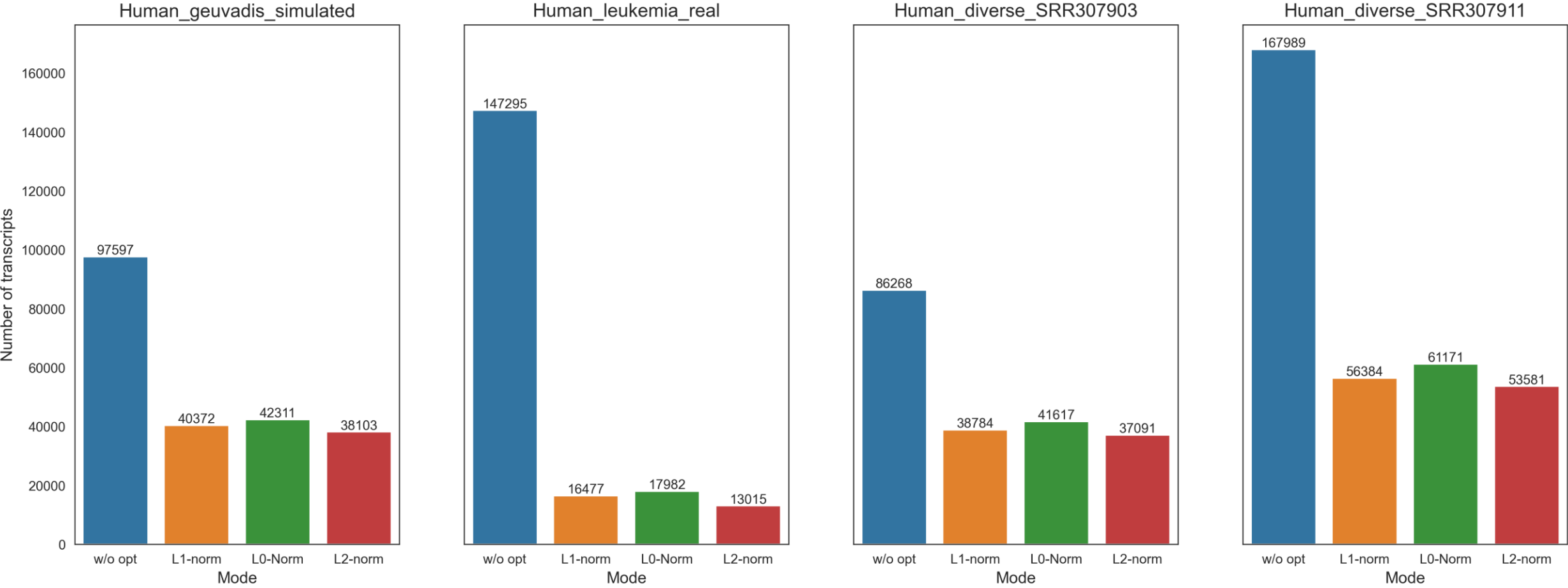
Overall results

Vielen Dank.

Anhang

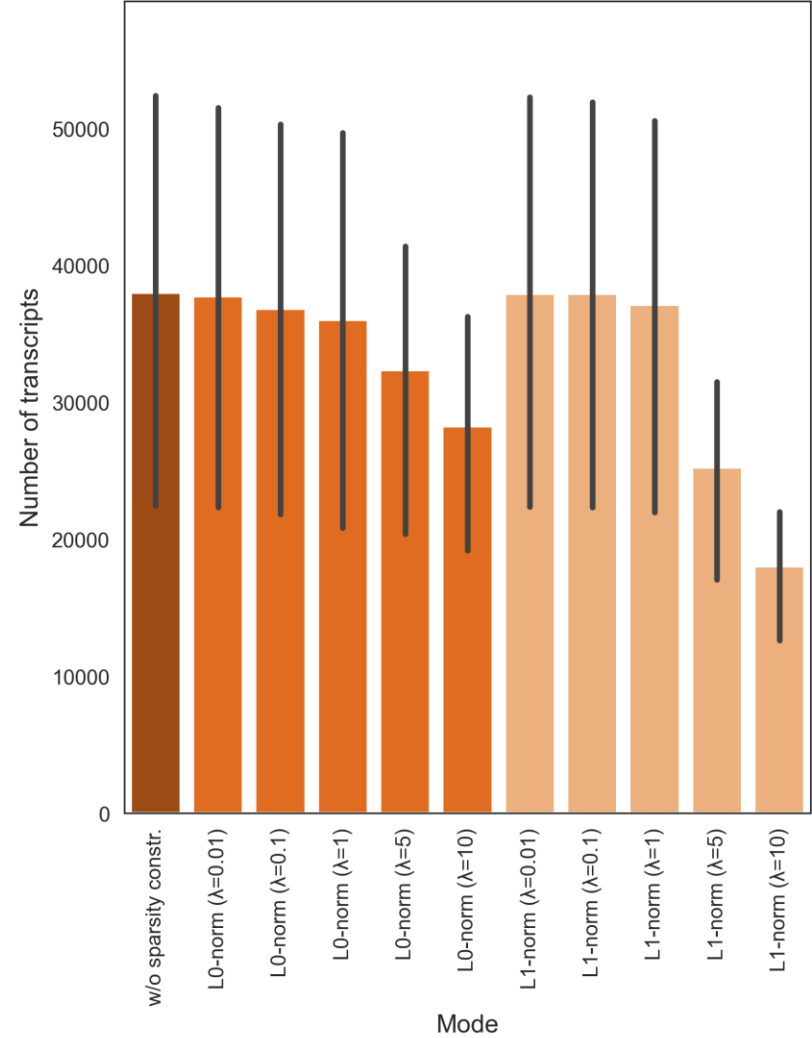# WP2 - Anhang

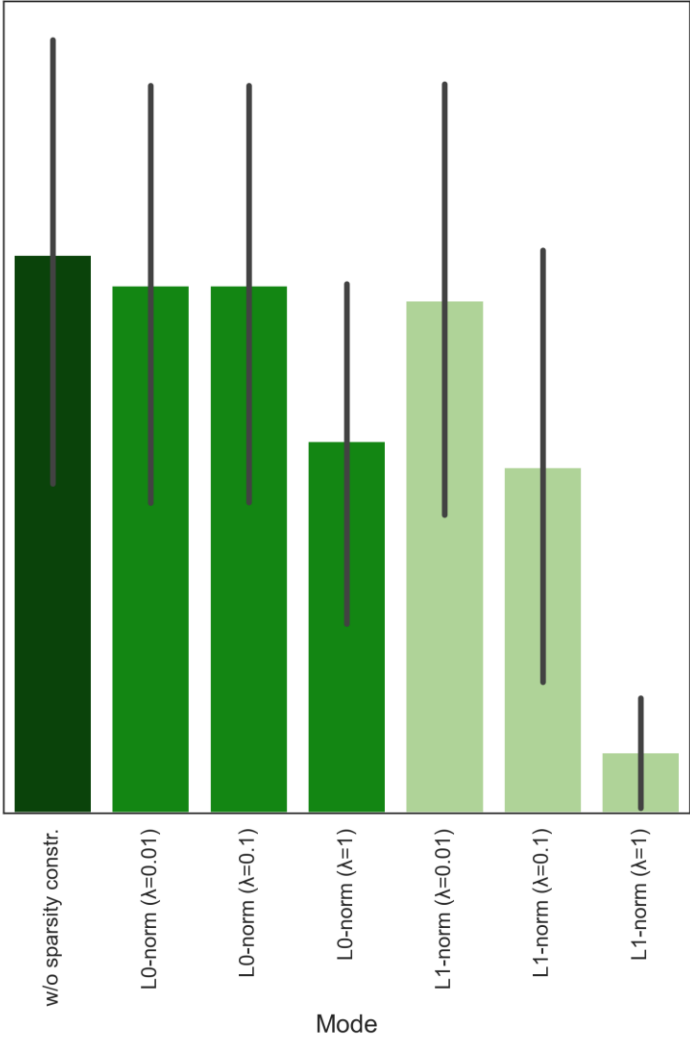- Total number of transcripts
- Without sparsity constraints

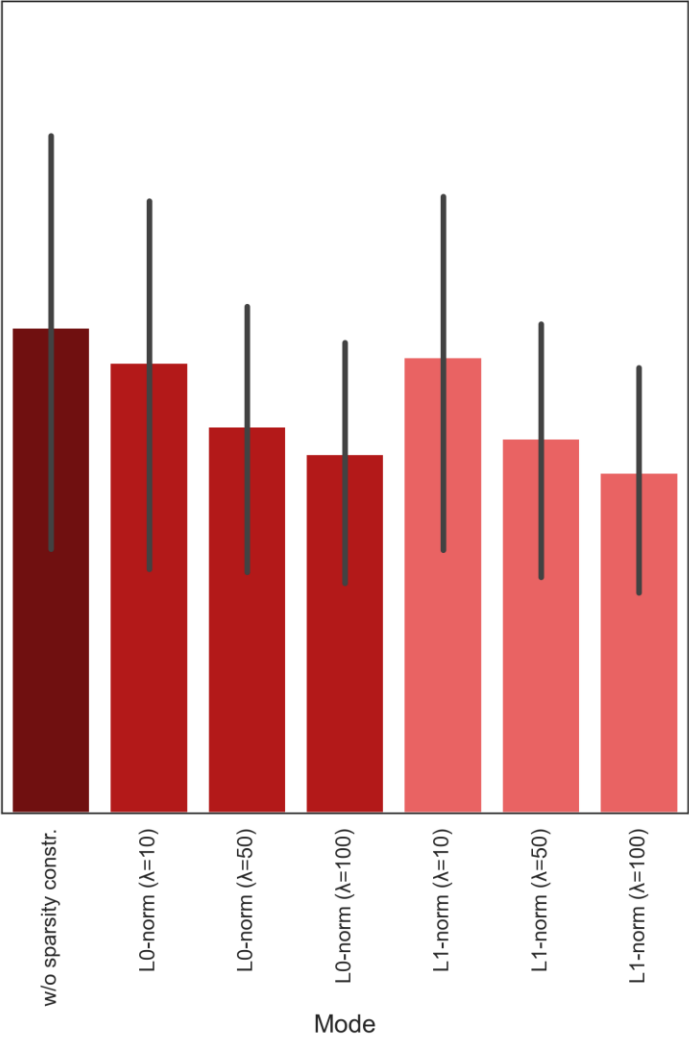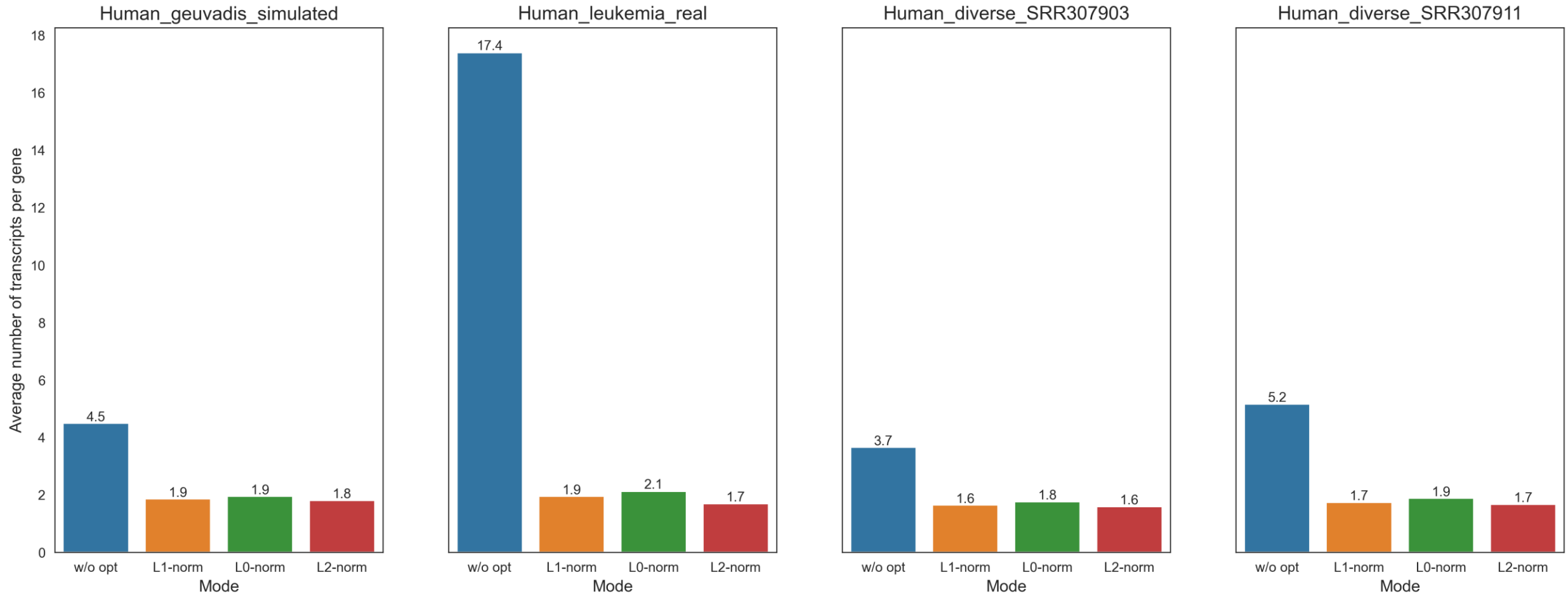- Total number of transcripts
- With sparsity constraints
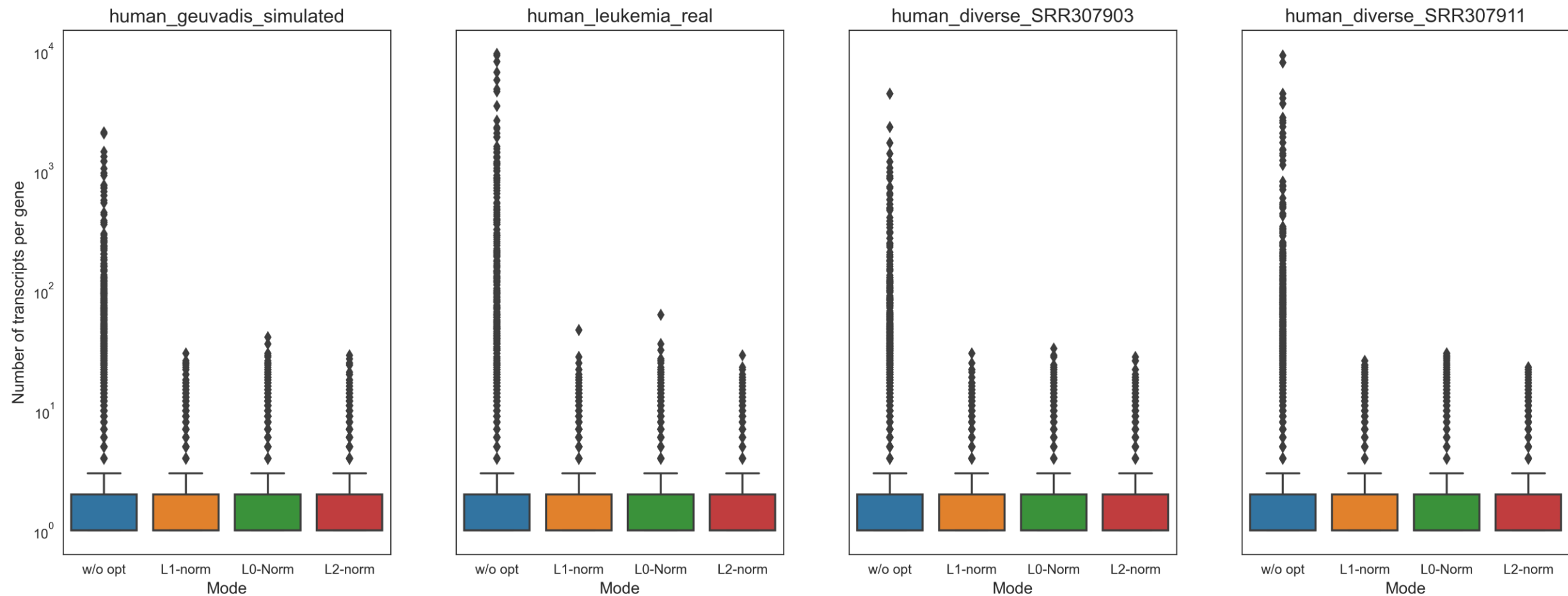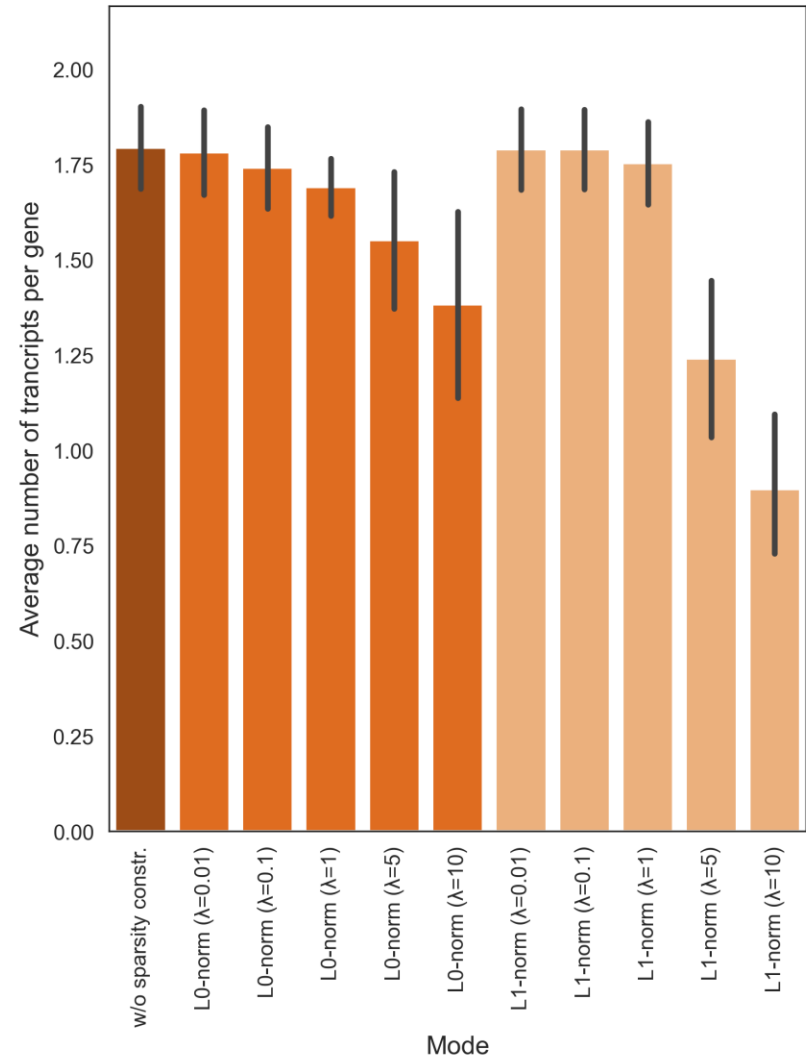
- Number of transcripts per gene
- Without sparsity constraints

- Number of transcripts per gene
- Without sparsity constraints

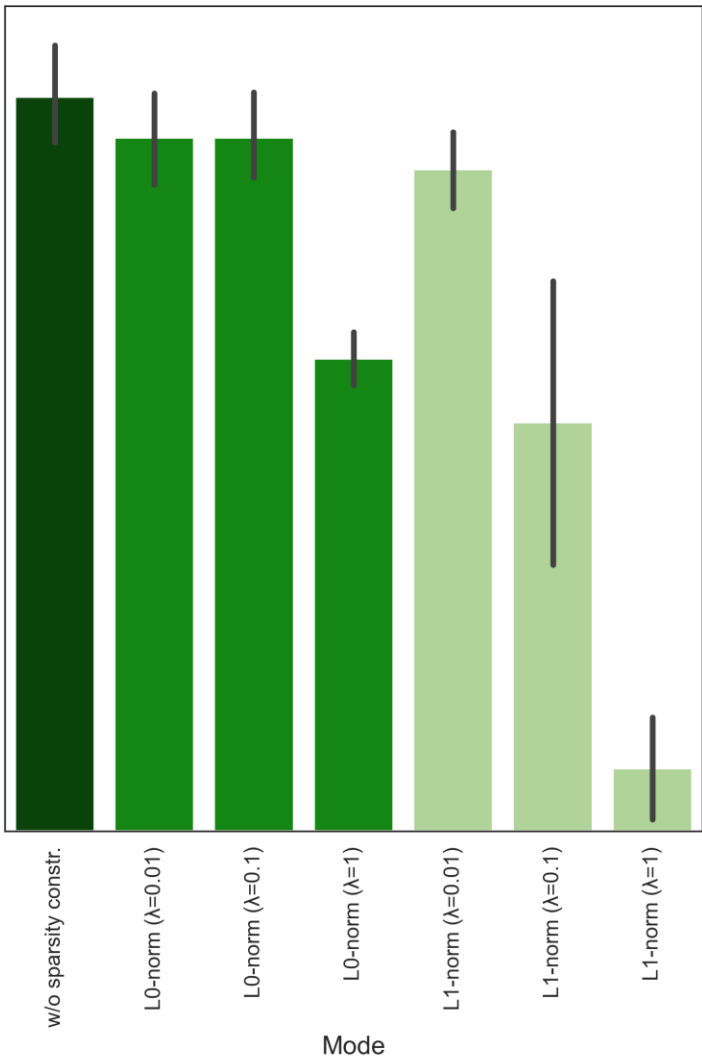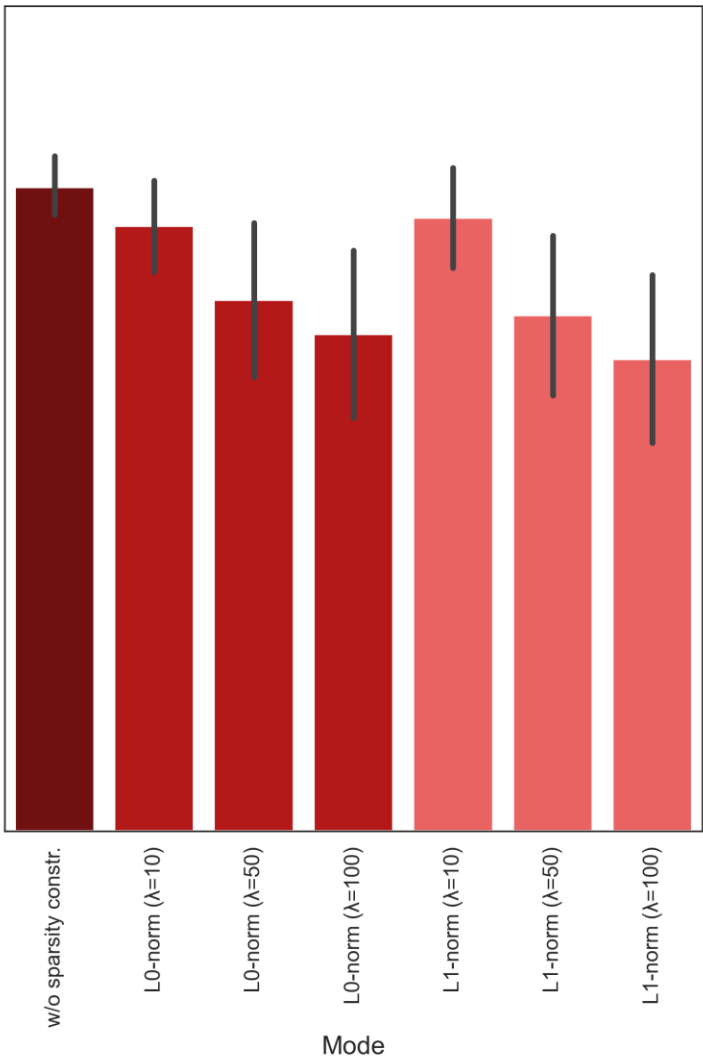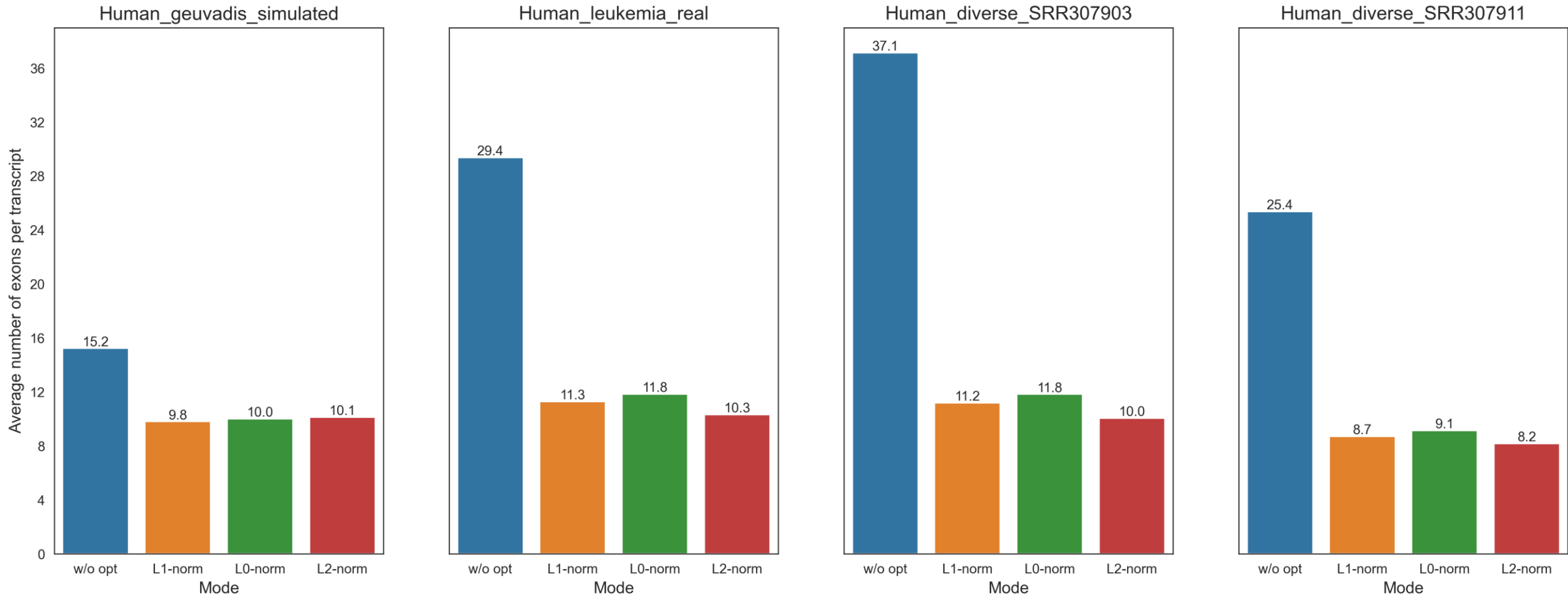human_geuvadis_simulated · human_leukemia_real · human_diverse_SRR307903 · human_diverse_SRR307911

- Number of transcripts per gene
- With sparsity constraints
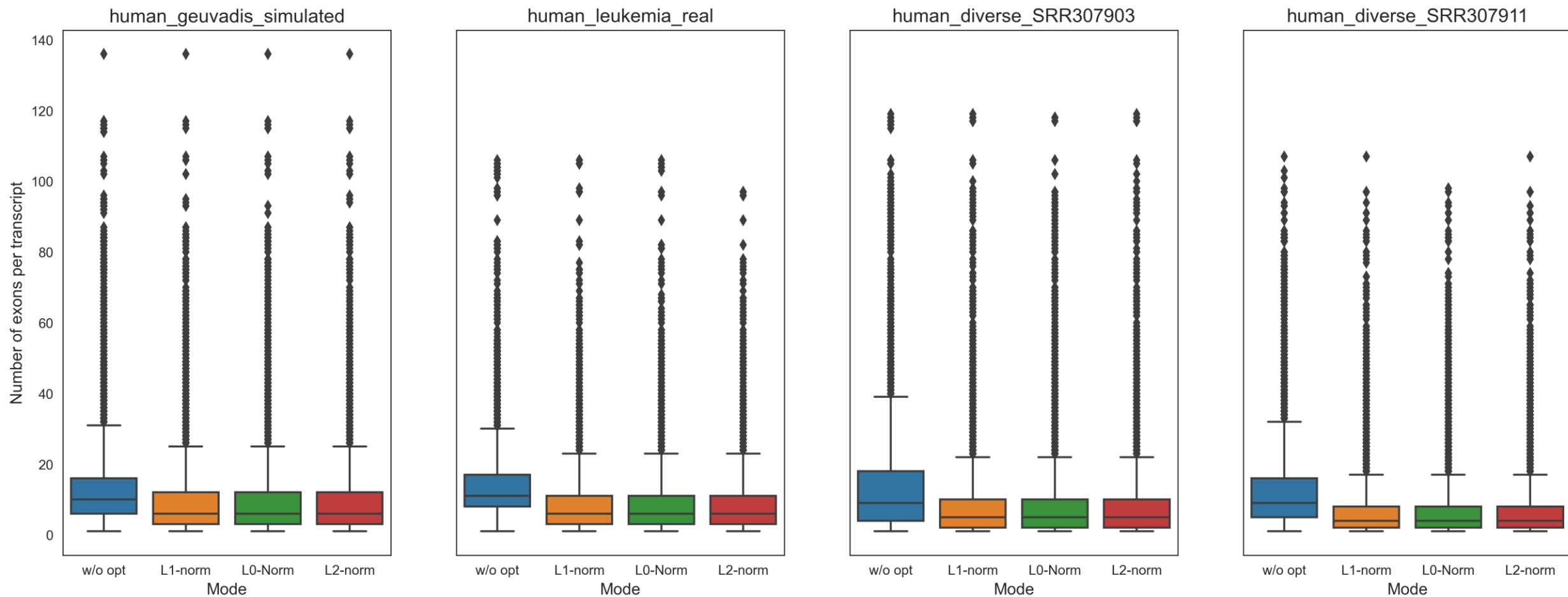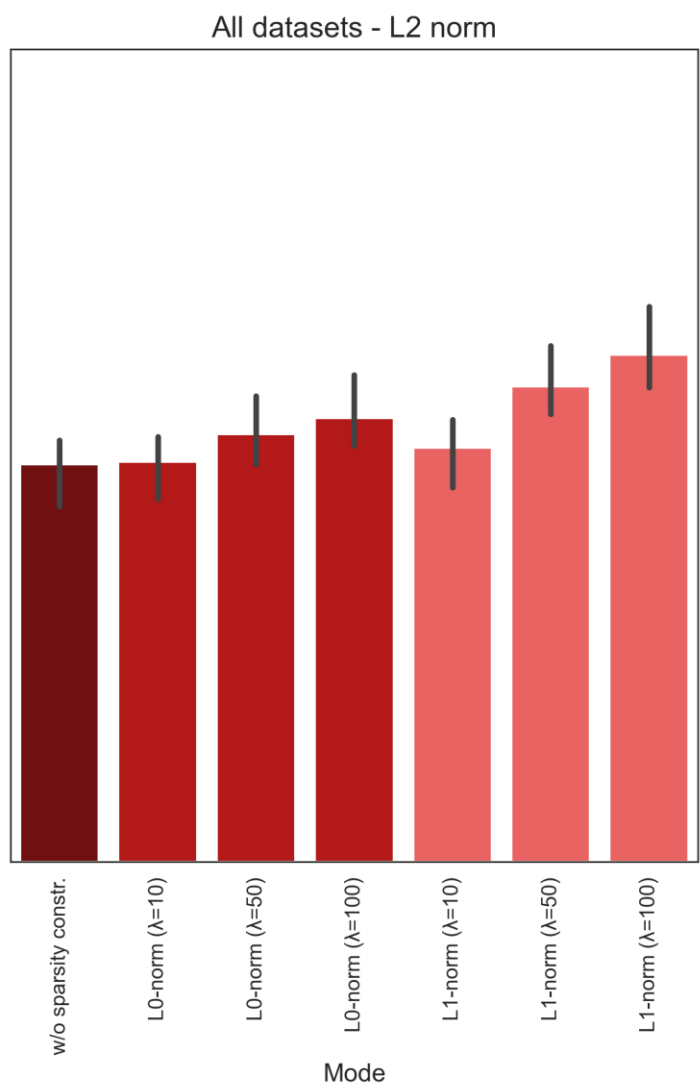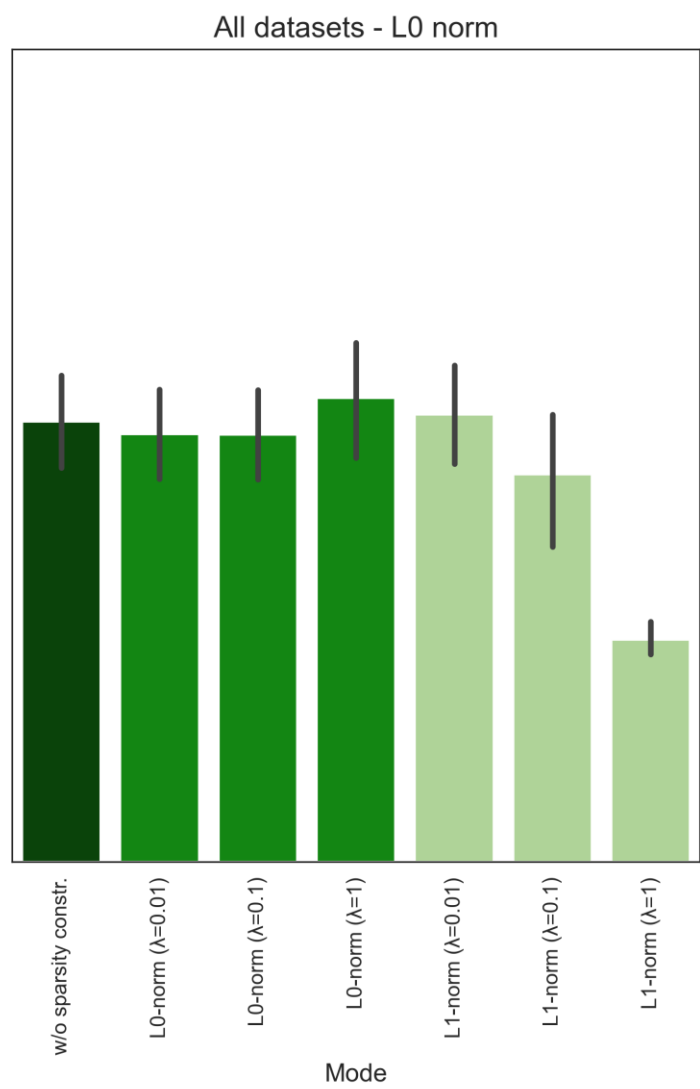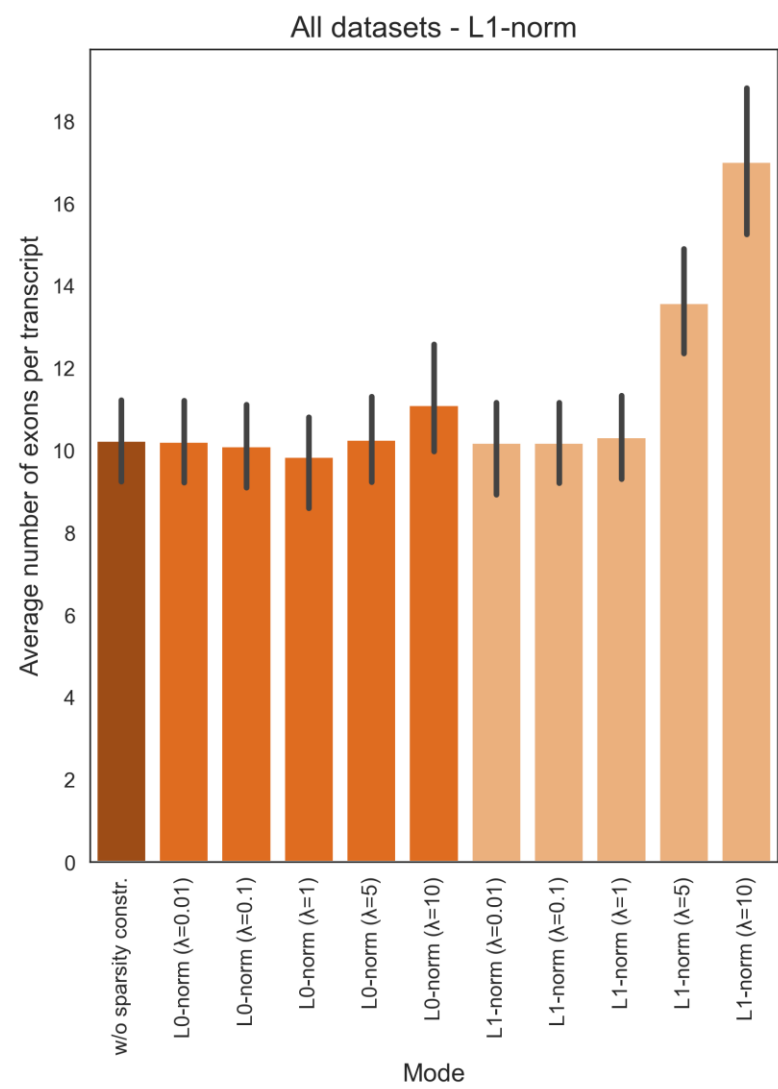
- Number of exons per transcript
- Without sparsity constraints
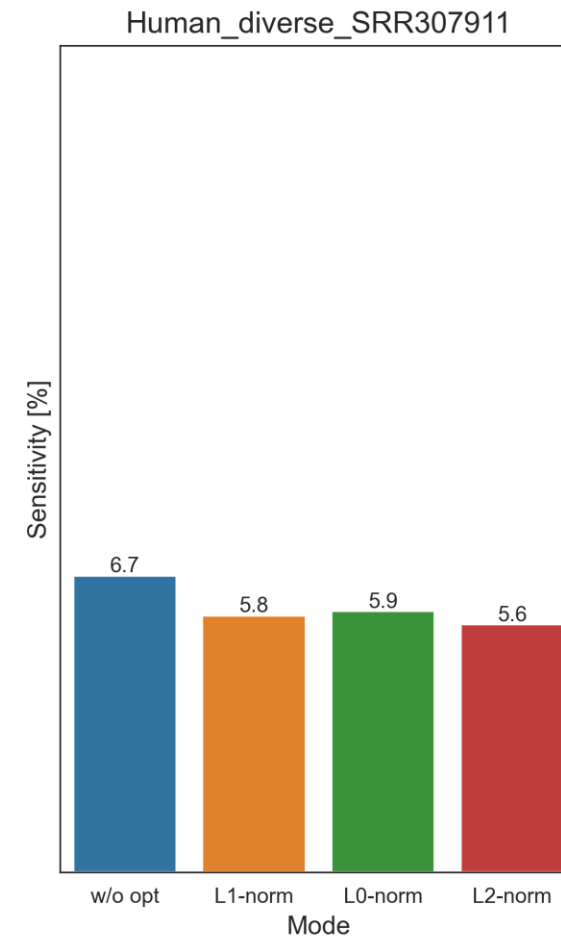
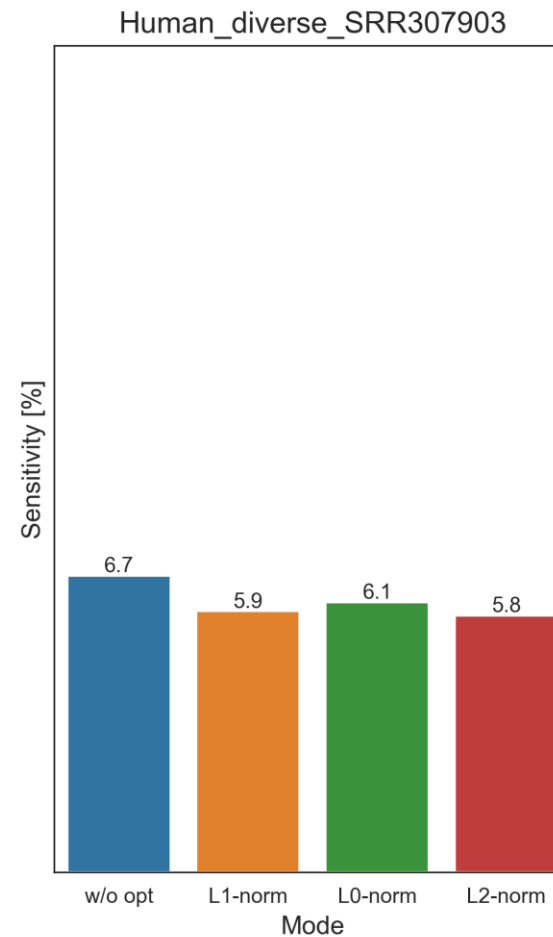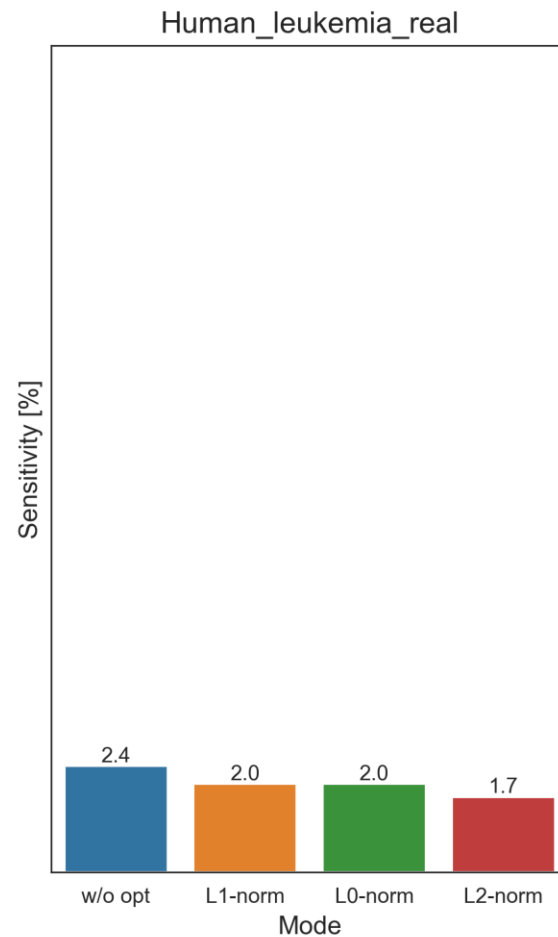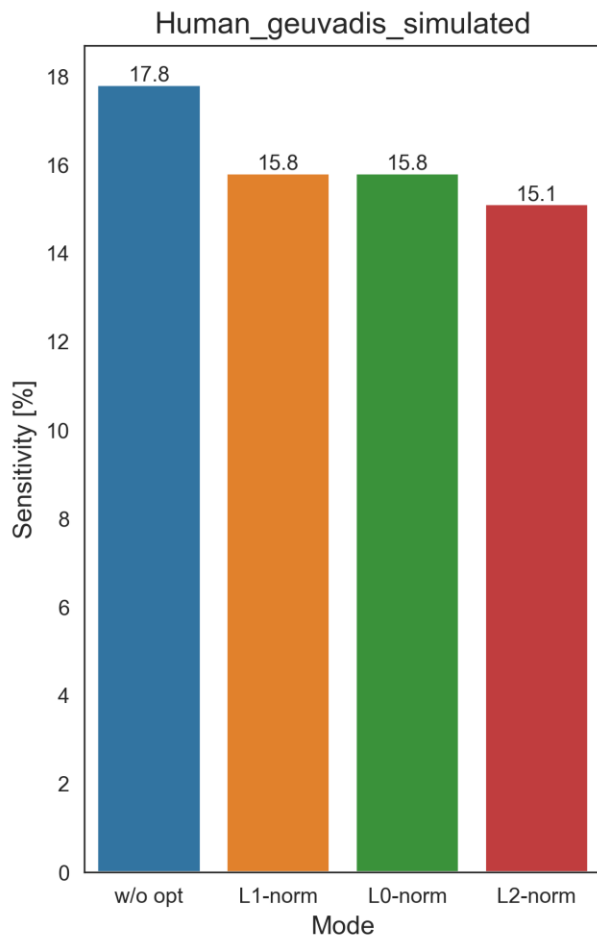- Number of exons per transcript
- Without sparsity constraints

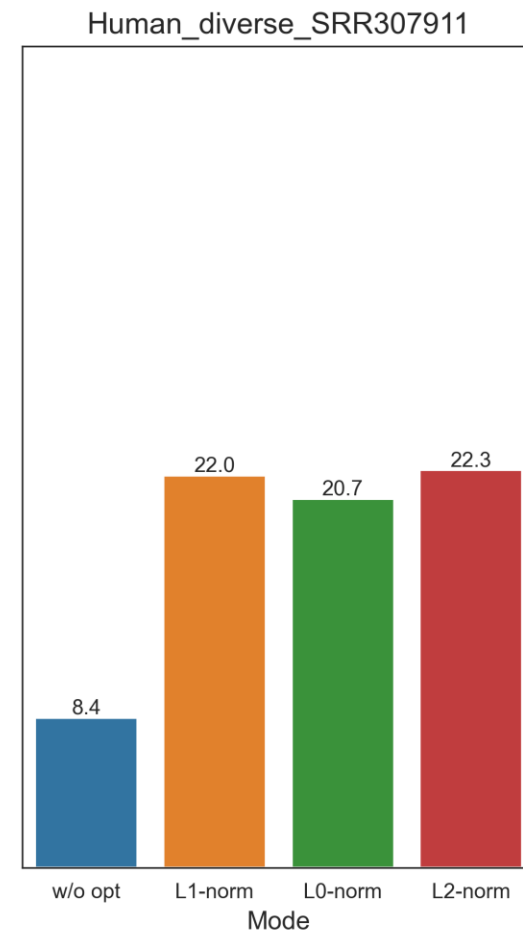- Number of exons per transcript
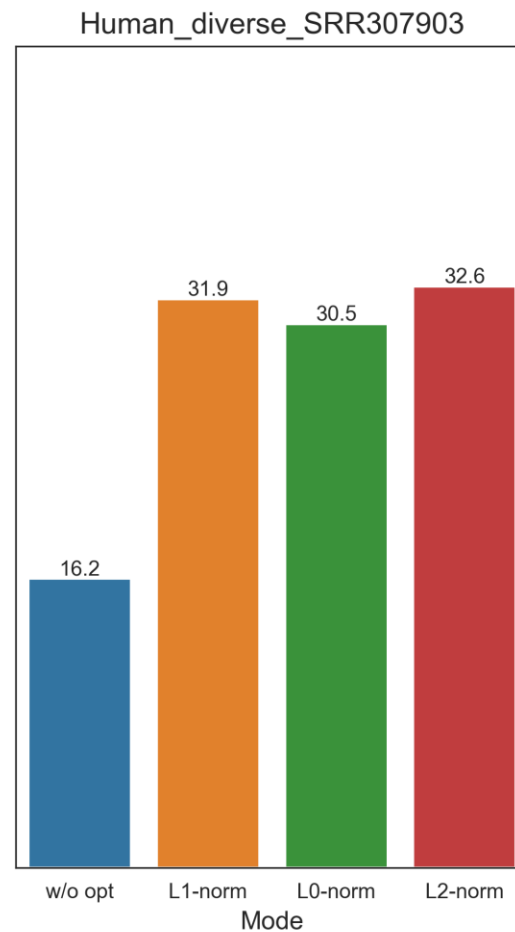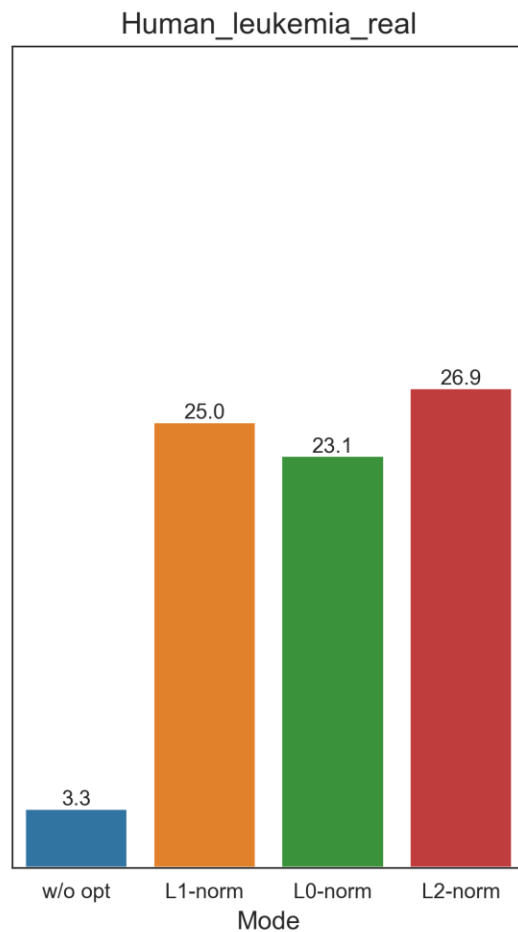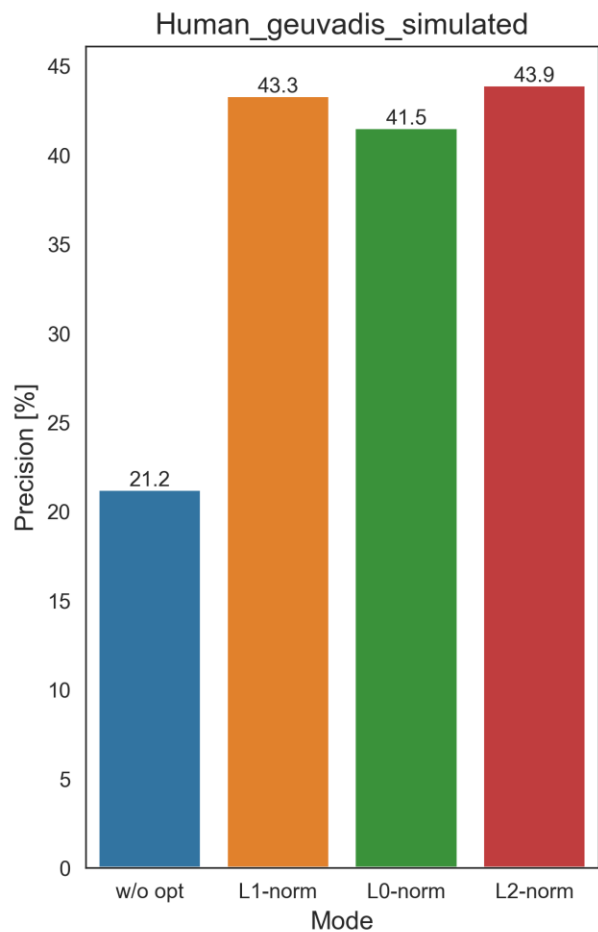- With sparsity constraints

- Sensitivity
- Without sparsity constraints

$$\text{Sensitivity} = \frac{\text{TP}}{\text{TP} + \text{FN}}$$
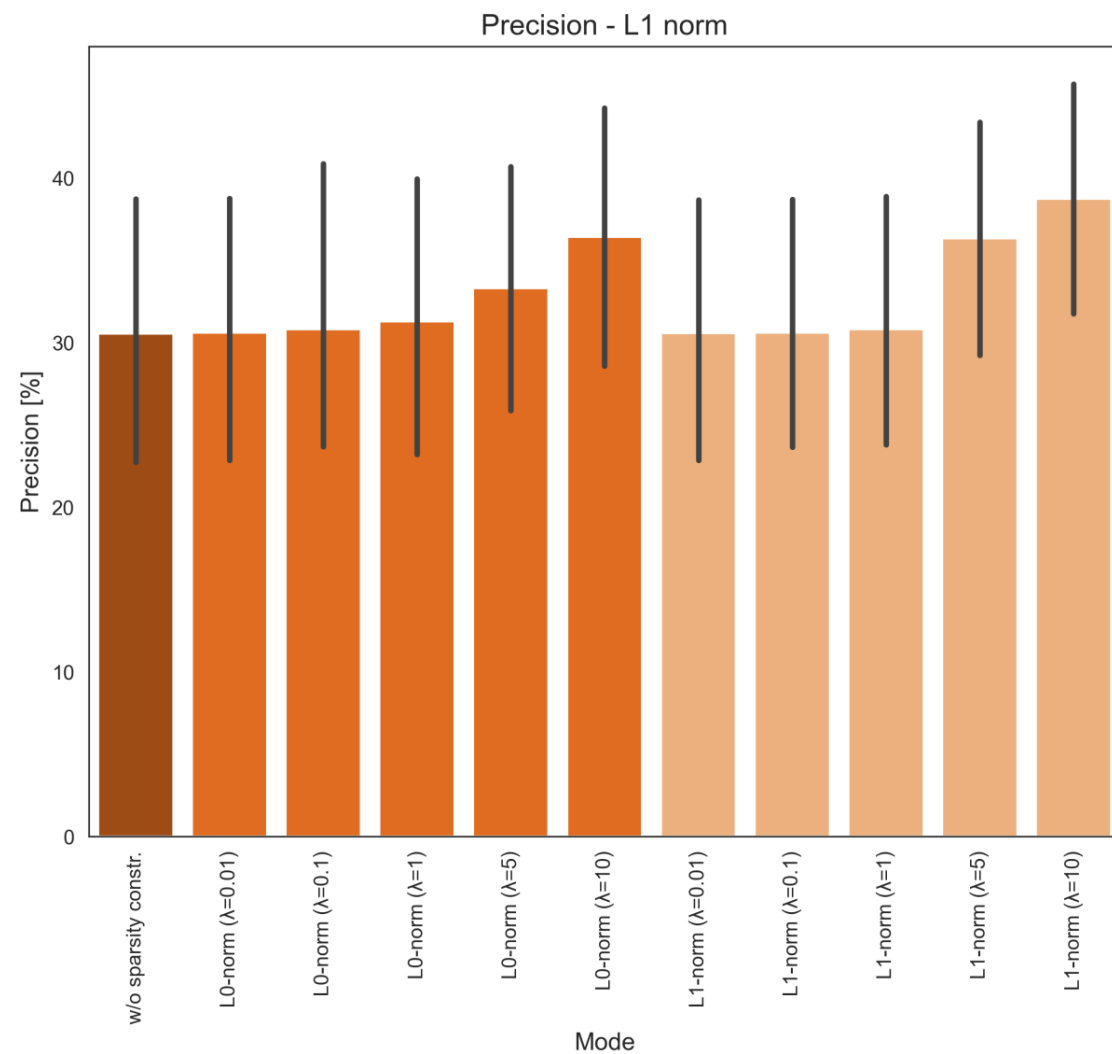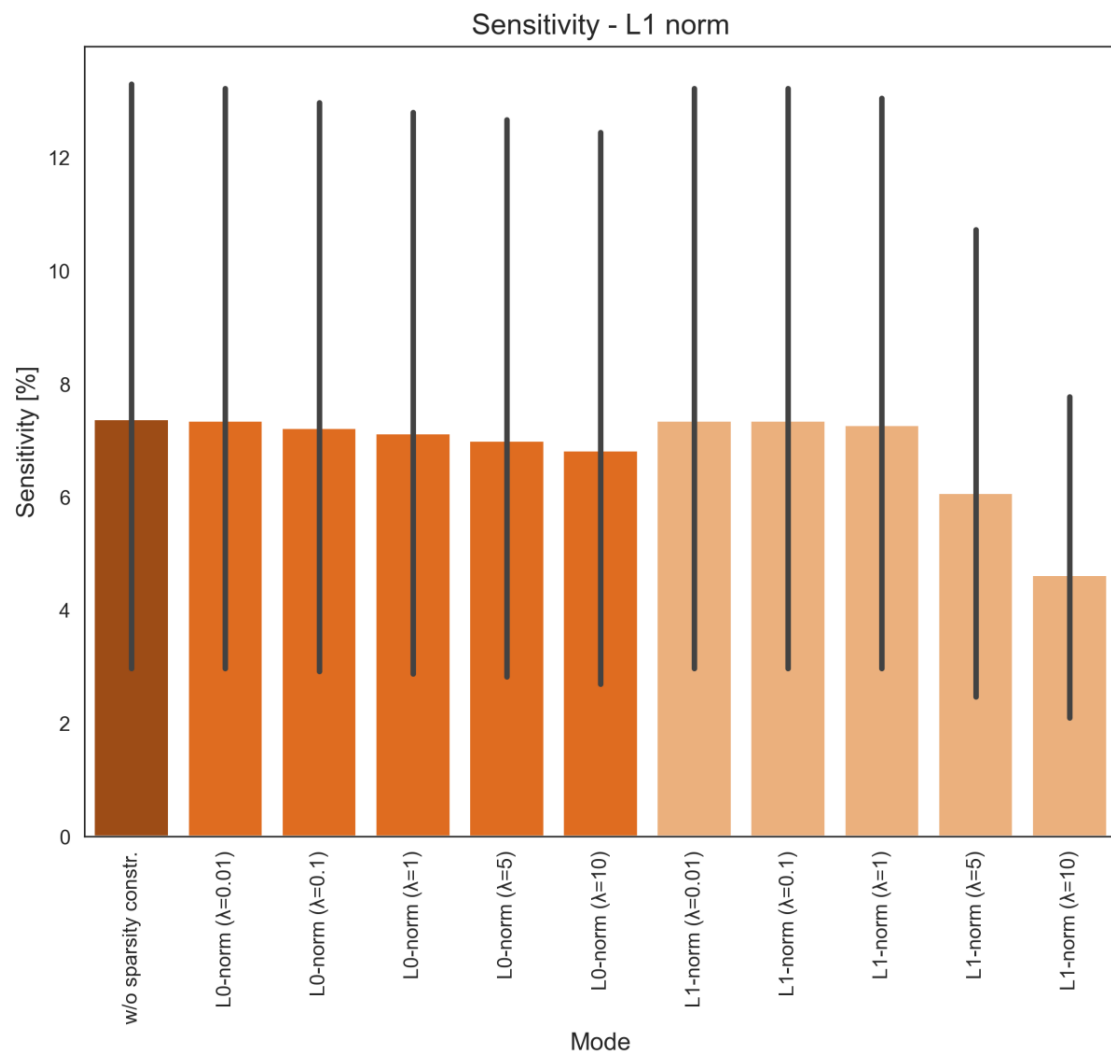
- Precision
- Without sparsity constraints

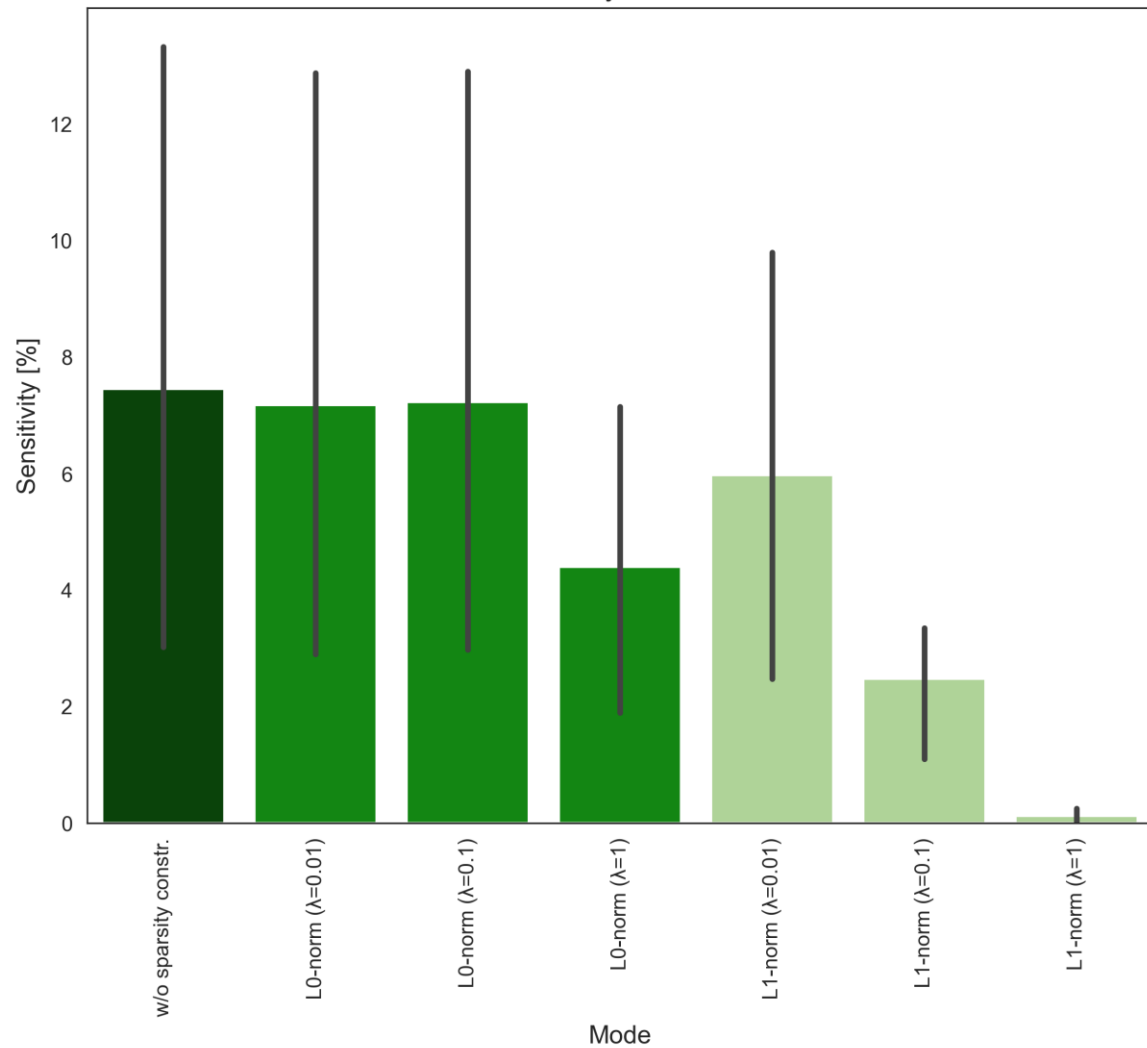$$\text{Precision} = \frac{\text{TP}}{\text{P}}$$

- Sensitivity and Precision
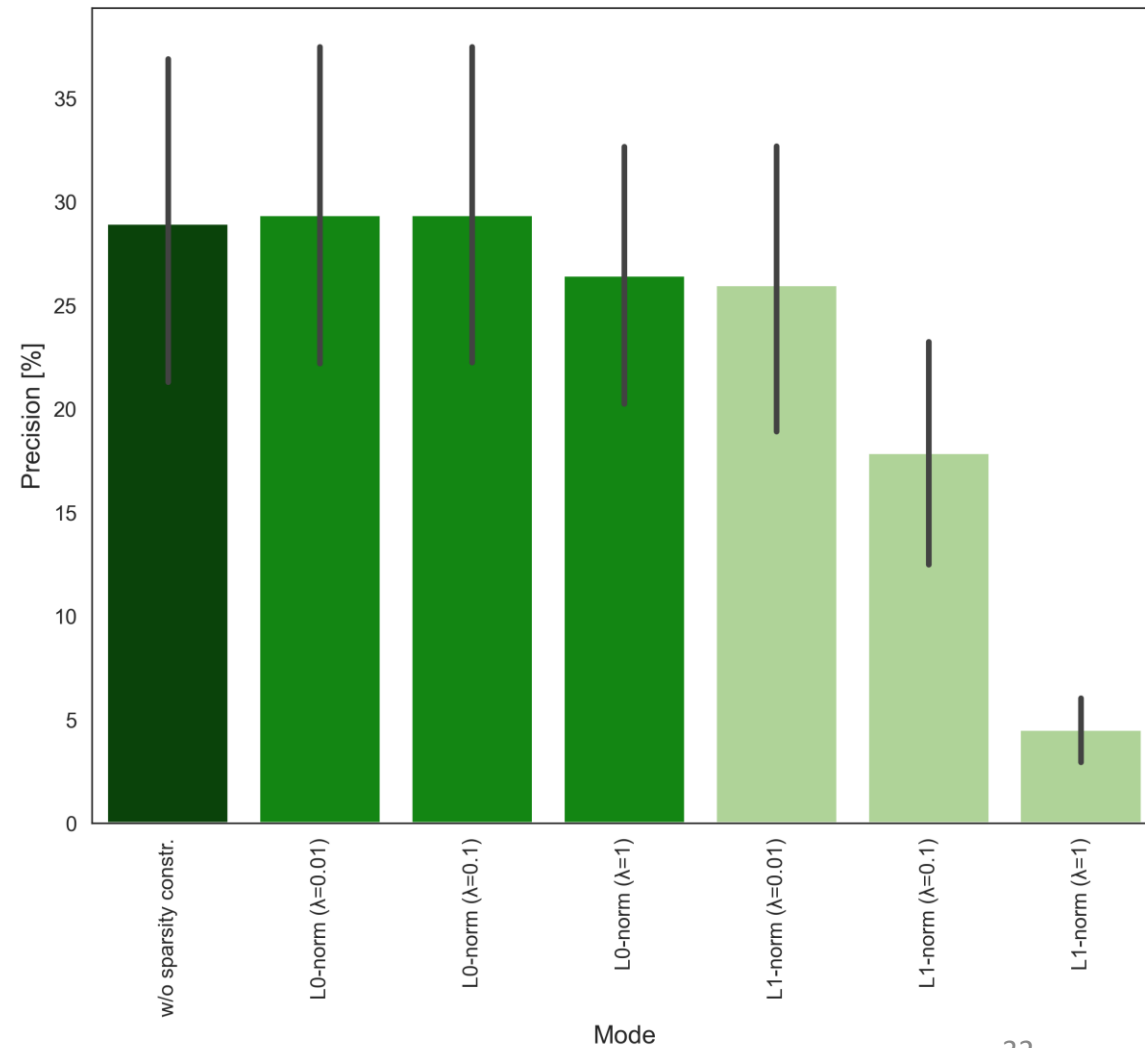- L1 norm
- With sparsity constraints

- Sensitivity and Precision
- L0 norm
- With sparsity constraints

- Sensitivity and Precision
- L2 norm
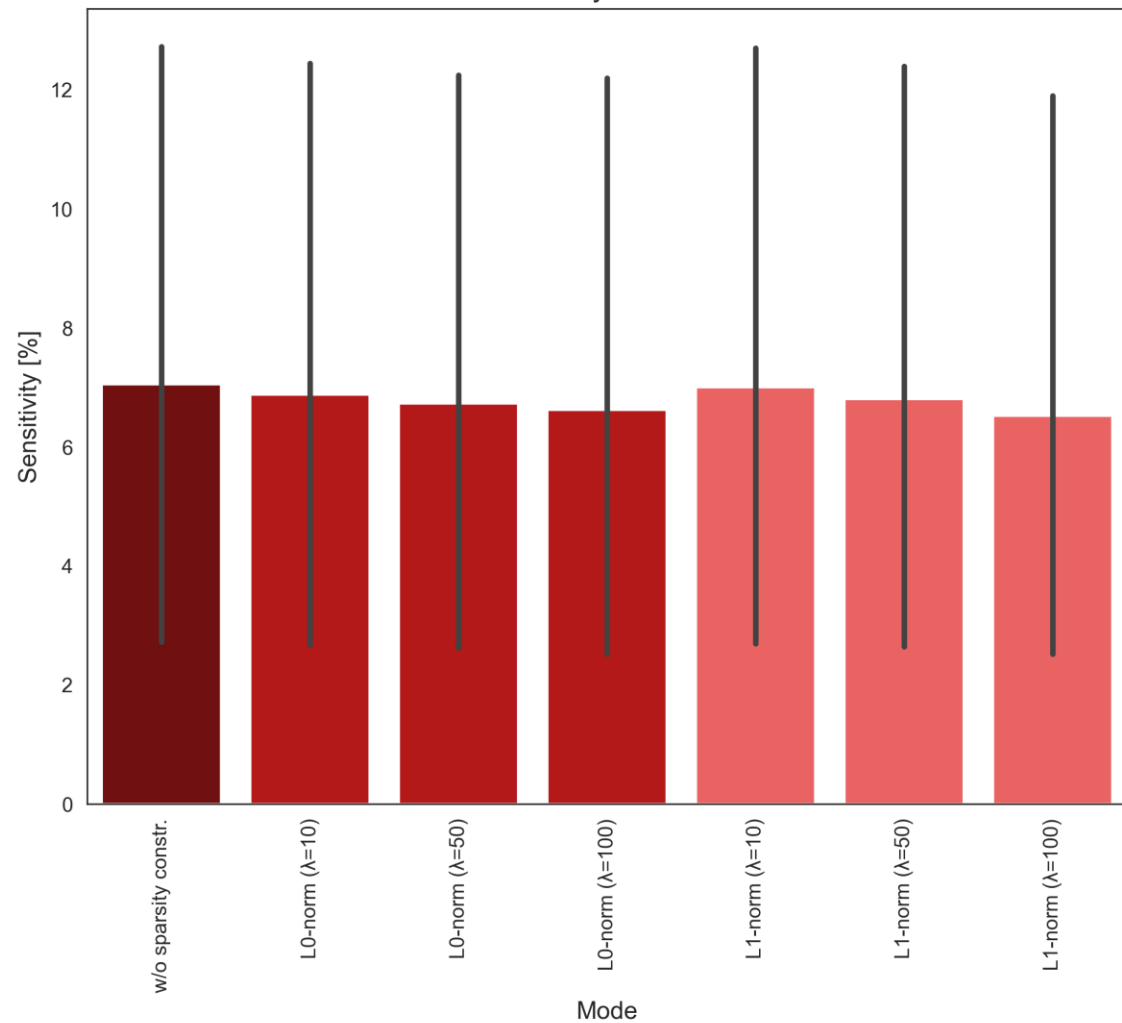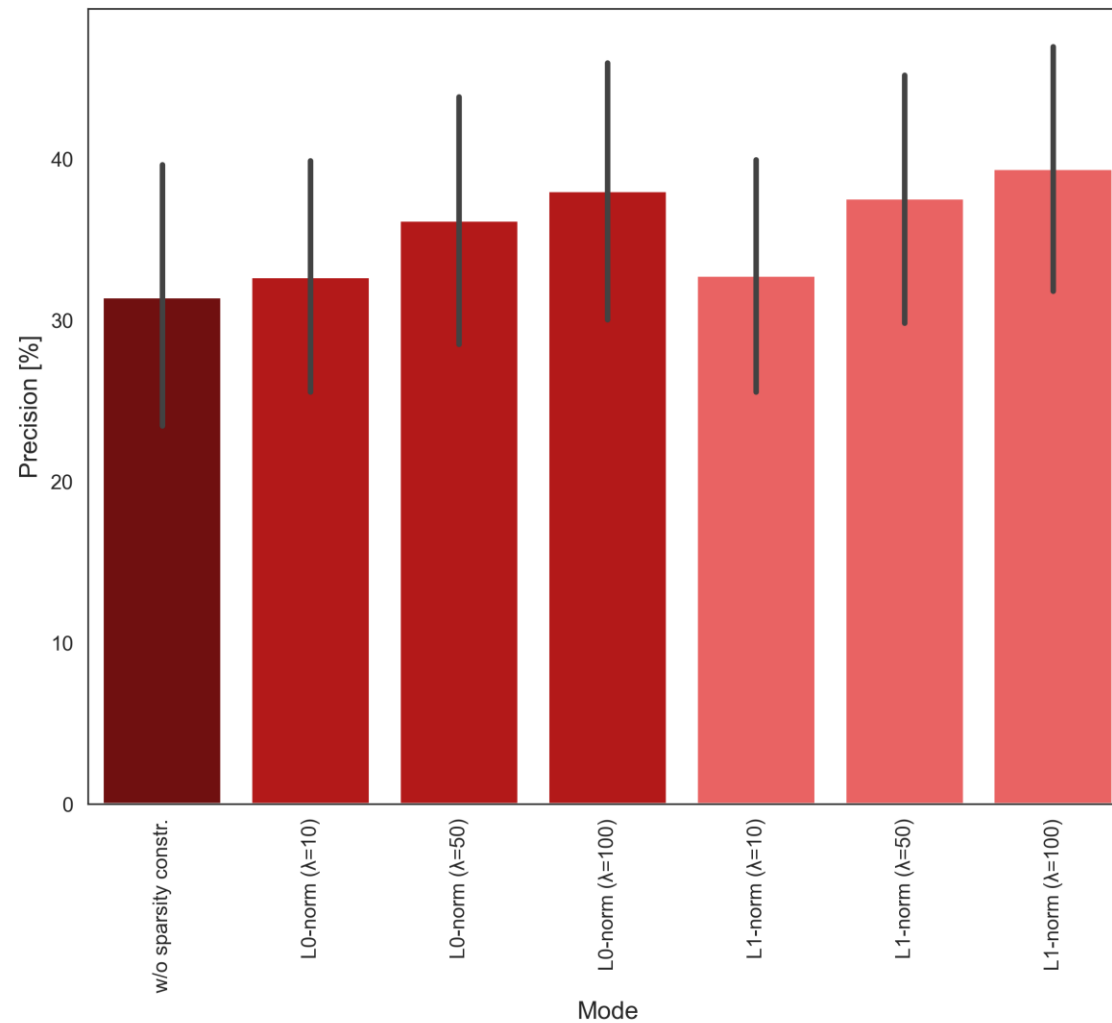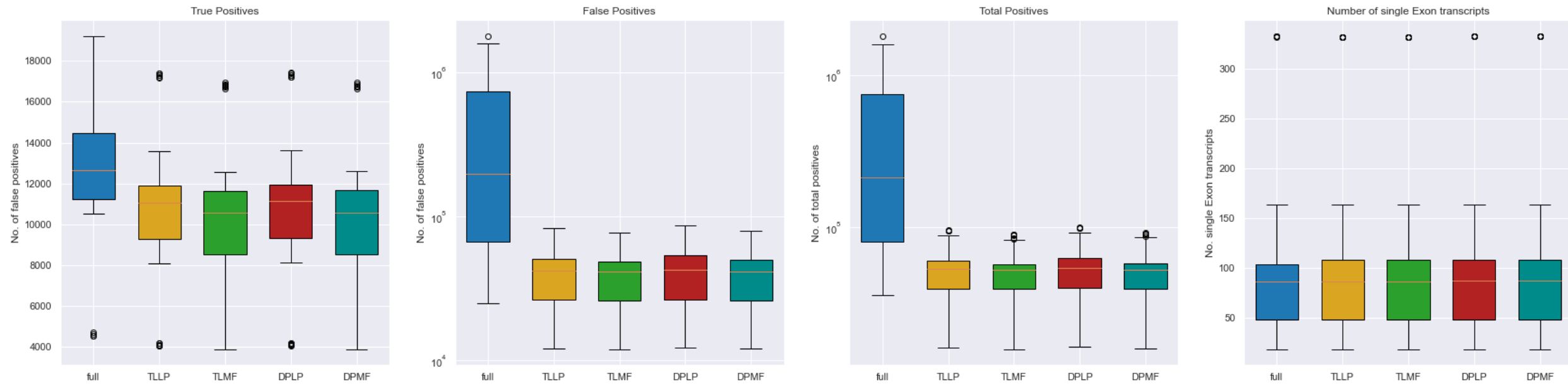- With sparsity constraints
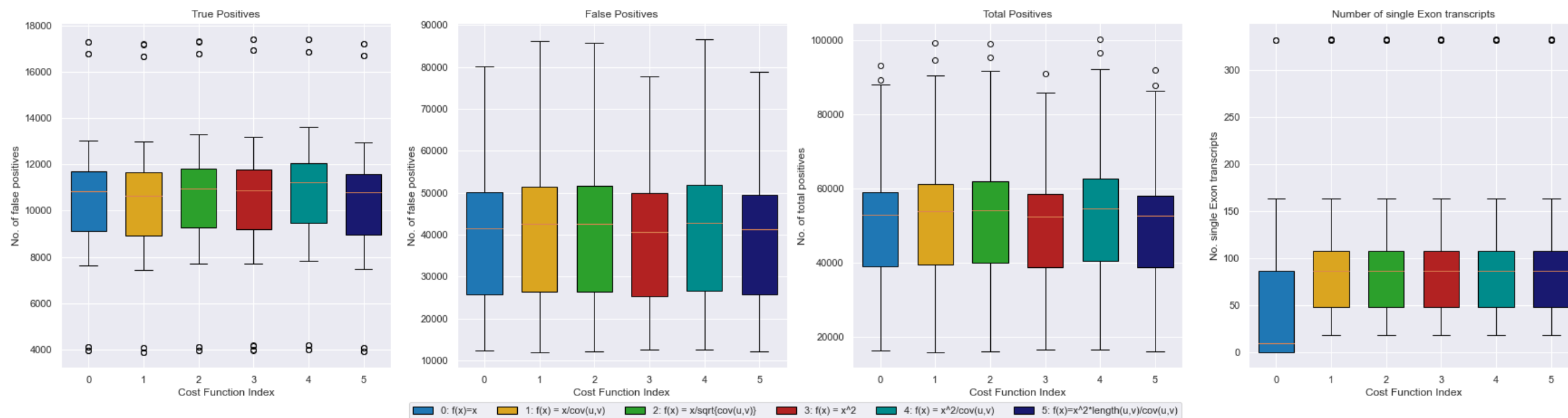

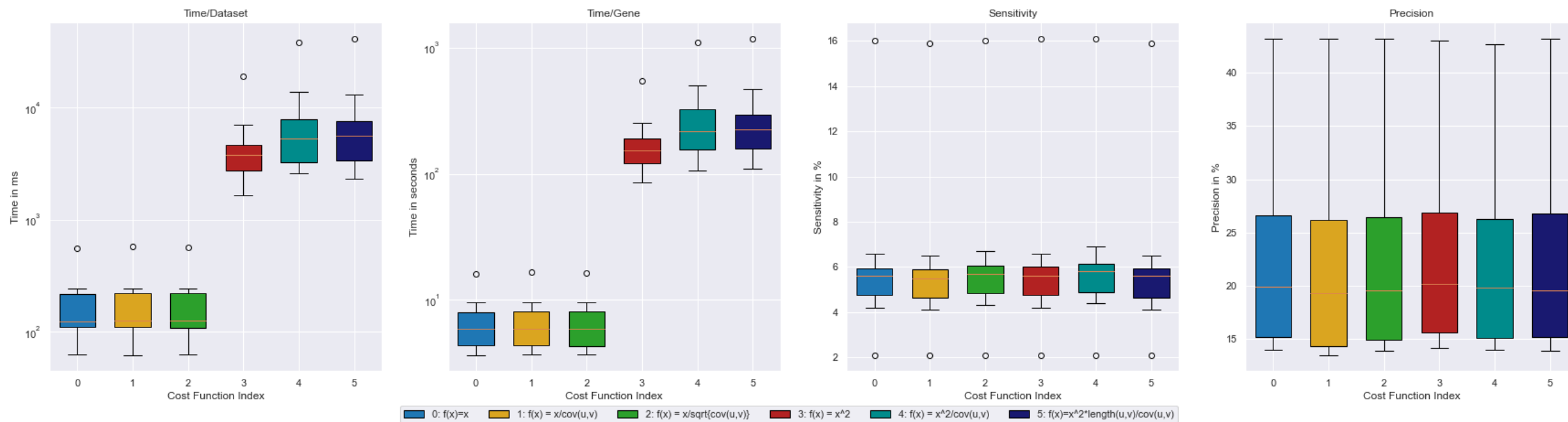Sensitivity - L2 norm

Precision - L2 norm

Anhang WP3
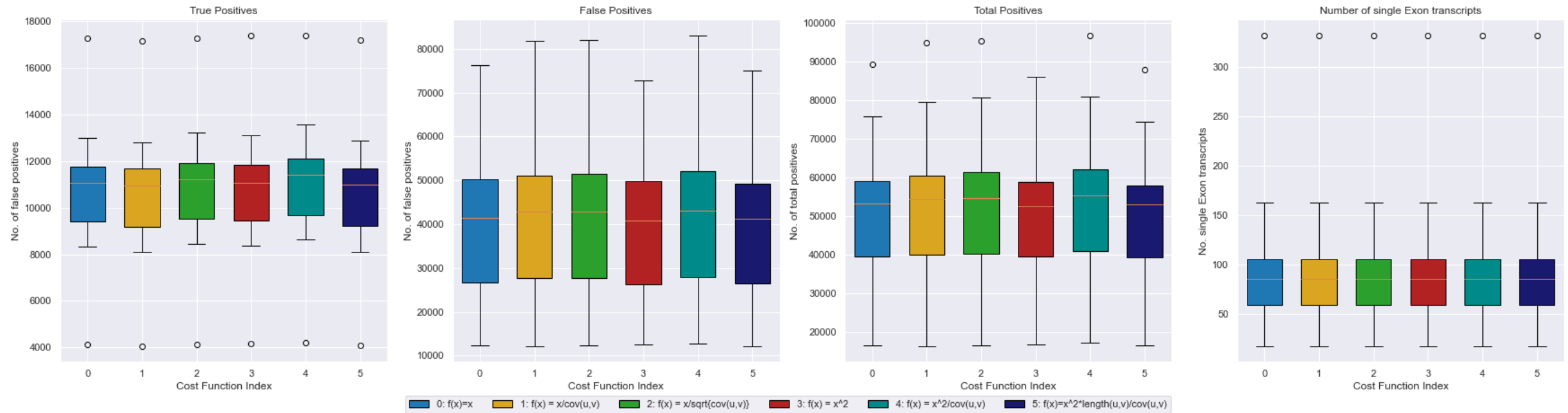
Further Analysis for flow-based Optimization

Further Analysis for flow-based Optimization

Analysis for flow-based Optimization (TLLP)

Analysis for flow-based Optimization (TLLP)

Analysis for flow-based Optimization (TLMF)
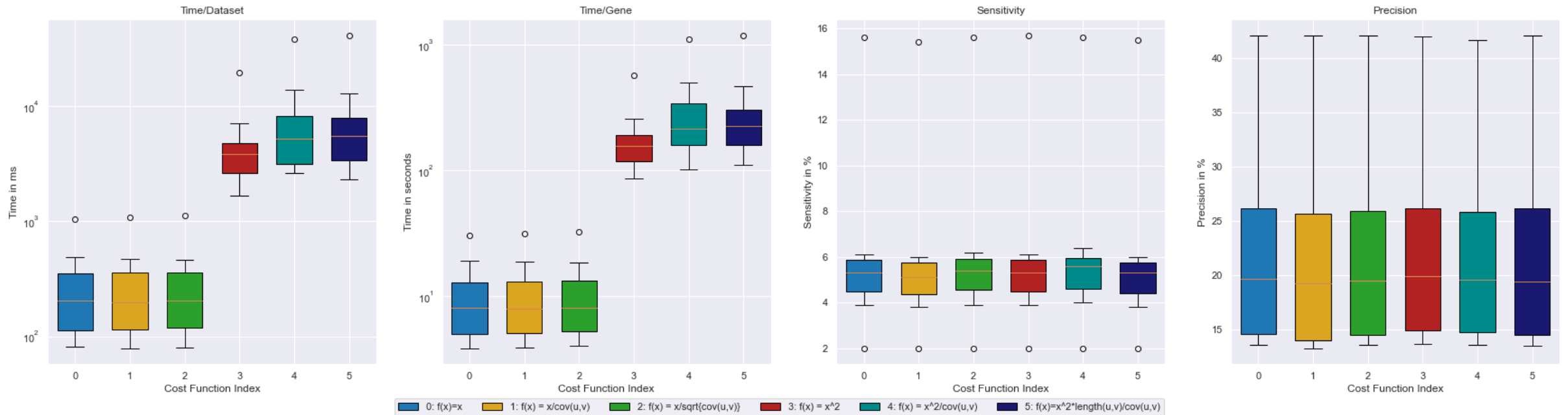
Analysis for flow-based Optimization (TLMF)
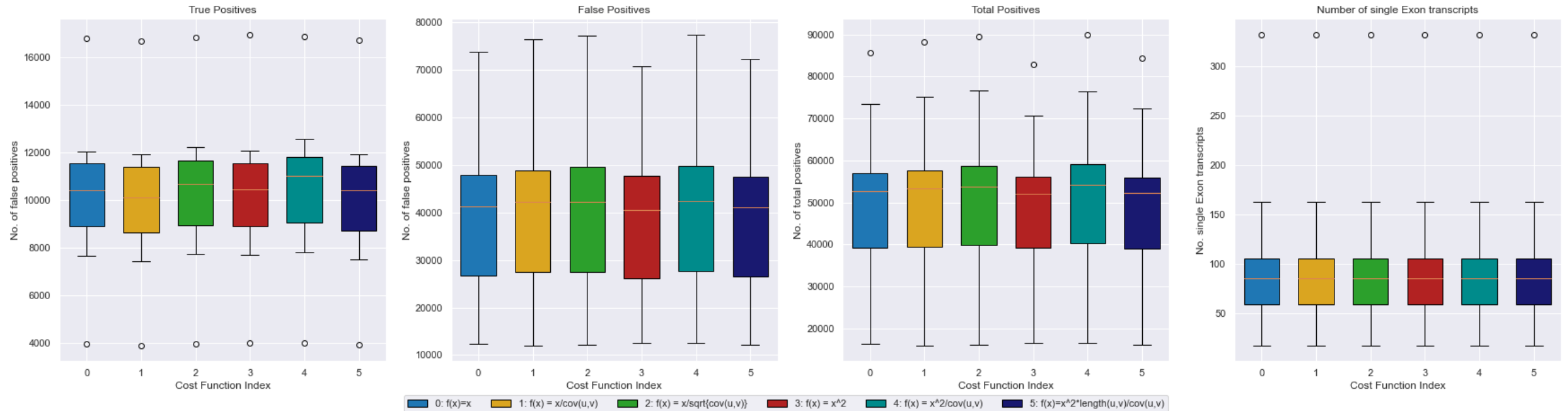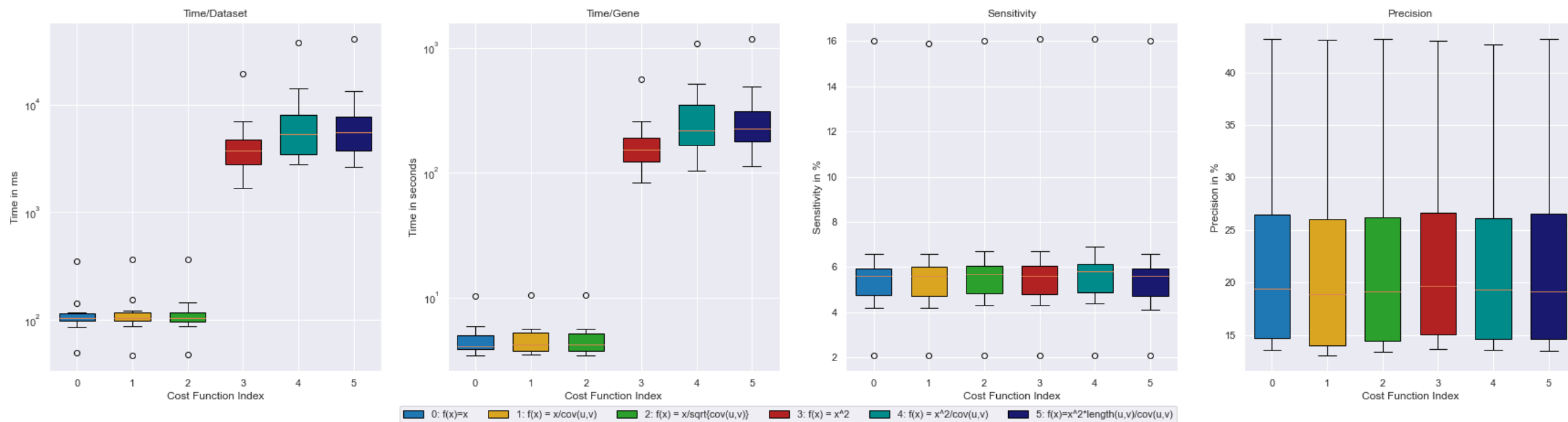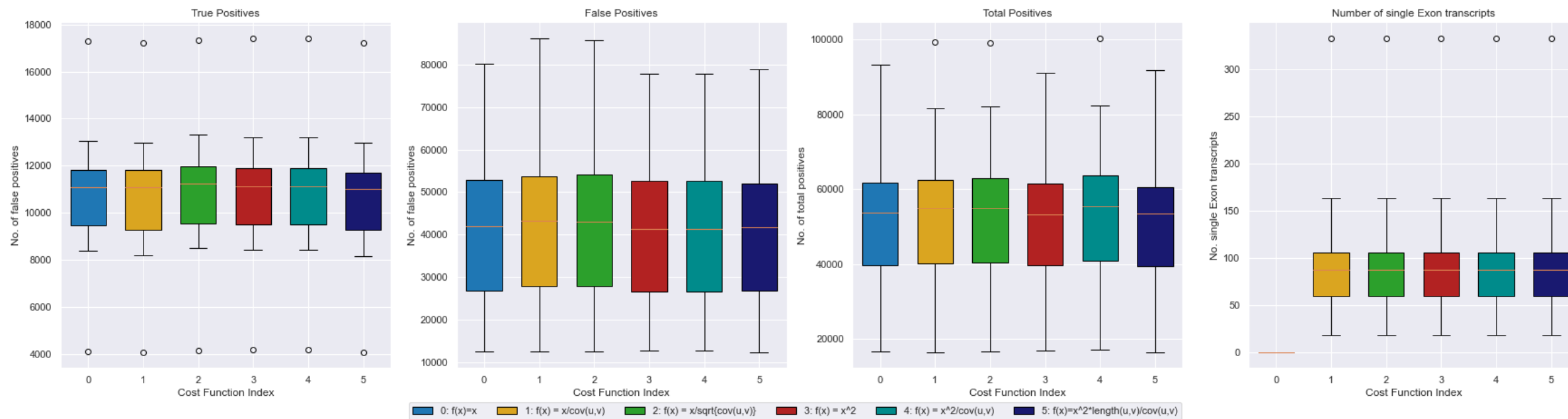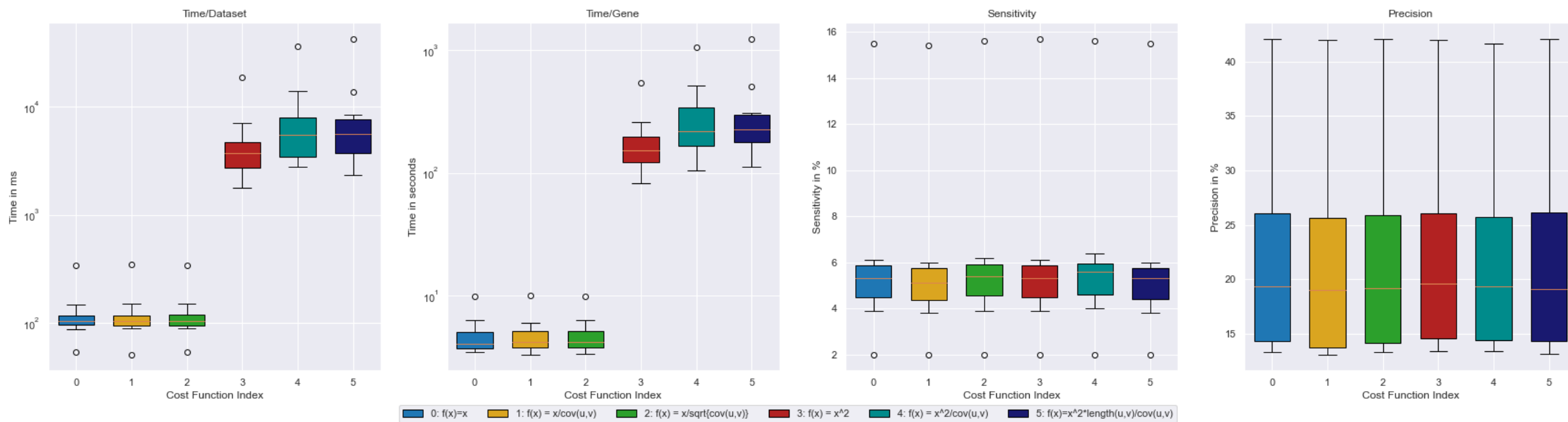
Analysis for flow-based Optimization (DPLP)

Analysis for flow-based Optimization (DPLP)

Analysis for flow-based Optimization (DPMF)

Analysis for flow-based Optimization (DPMF)