Luyang Han & Janosch Ott

# Computation & optimization for Lasso - part 2

Luyang Han & Janosch Ott

FTH Zürich

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## Overview

#### Luyang Han & Janosch Ott

A Simulation

- 1. Coordinate Descent
- 2. A Simulation Study
- 3. Least Angle Regression
- 4. ADMM
- 5. Min-Max Algorithms
- 6. Alternating Minimizations
- 7. Screening Rules

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Coordinate Descent

A Simulation Study

Regress

ADMM

Min-Max Algorithm

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# Paragraphs of Text

Sed iaculis dapibus gravida. Morbi sed tortor erat, nec interdum arcu. Sed id lorem lectus. Quisque viverra augue id sem ornare non aliquam nibh tristique. Aenean in ligula nisl. Nulla sed tellus ipsum. Donec vestibulum ligula non lorem vulputate fermentum accumsan neque mollis.

Sed diam enim, sagittis nec condimentum sit amet, ullamcorper sit amet libero. Aliquam vel dui orci, a porta odio. Nullam id suscipit ipsum. Aenean lobortis commodo sem, ut commodo leo gravida vitae. Pellentesque vehicula ante iaculis arcu pretium rutrum eget sit amet purus. Integer ornare nulla quis neque ultrices lobortis. Vestibulum ultrices tincidunt libero, quis commodo erat ullamcorper id.

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Descent

A Simulation Study

ADAMA

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#### **Bullet Points**

- Lorem ipsum dolor sit amet, consectetur adipiscing elit
- Aliquam blandit faucibus nisi, sit amet dapibus enim tempus eu
- Nulla commodo, erat quis gravida posuere, elit lacus lobortis est, quis porttitor odio mauris at libero
- Nam cursus est eget velit posuere pellentesque
- Vestibulum faucibus velit a augue condimentum quis convallis nulla gravida

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Coordinat Descent

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# Blocks of Highlighted Text

#### Block 1

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer lectus nisl, ultricies in feugiat rutrum, porttitor sit amet augue. Aliquam ut tortor mauris. Sed volutpat ante purus, quis accumsan dolor.

#### Block 2

Pellentesque sed tellus purus. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Vestibulum quis magna at risus dictum tempor eu vitae velit.

#### Block 3

Suspendisse tincidunt sagittis gravida. Curabitur condimentum, enim sed venenatis rutrum, ipsum neque consectetur orci, sed blandit justo nisi ac lacus.

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Descent

A Simulation

Least Angle

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ADIVIIVI

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# Multiple Columns

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer lectus nisl, ultricies in feugiat rutrum, porttitor sit amet augue. Aliquam ut tortor mauris. Sed volutpat ante purus, quis accumsan dolor.

### Heading

- Statement
- ② Explanation
- 3 Example

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## **Table**

Treatments	Response 1	Response 2
Treatment 1		0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

Table: Table caption

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Screening Rules Theorem (Mass–energy equivalence)  $E = mc^2$ 

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## Example (Theorem Slide Code)

```
\begin{frame}
\frametitle{Theorem}
\begin{theorem}[Mass--energy equivalence]
$E = mc^2$
\end{theorem}
\end{frame}
```

Computation optimization Luyang Han &

**Figure** 

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Screening Rules

Uncomment the code on this slide to include your own image from the same directory as the template .TeX file.

## Citation

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Screening Rules An example of the \cite command to cite within the presentation:

This statement requires citation [Hastie et al., 2015].

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#### References



Trevor Hastie, Robert Tibshirani, and Martin Wainwright (2015) Statistical learning with sparsity: the Lasso and generalizations *CRC Press;* Boca Raton, FL

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# The End