

# TMA4220 - Numerical Solution of Partial Differential Equations Using Finite Element Methods

## Programming Project

G. A. Hasle   T. Baerland   E. Ingebrigtsen

Finite Element Methods on Free Vibrations

# The Problem

Optional Subtitle

## The Free Vibration Equation

$$\rho \frac{\partial^2 u}{\partial t^2} = \nabla \sigma(u) \quad (1)$$

- Semi-discretization on (1) yields

$$M\ddot{\mathbf{u}} = -A\mathbf{u} \quad (2)$$

# Second Slide Title

- First item.

## Second Slide Title

- First item.
- Second item.

# Second Slide Title

- First item.
- Second item.
- Third item.

# Second Slide Title

- First item.
- Second item.
- Third item.
- Fourth item.

## Second Slide Title

- First item.
- Second item.
- Third item.
- Fourth item.
- Fifth item.

## Second Slide Title

- First item.
- Second item.
- Third item.
- Fourth item.
- Fifth item. Extra text in the fifth item.



# Blocks

## Block Title

You can also highlight sections of your presentation in a block, with it's own title

## Theorem

*There are separate environments for theorems, examples, definitions and proofs.*



## Example

Here is an example of an example block.

# Summary

- The **first main message** of your talk in one or two lines.
- The **second main message** of your talk in one or two lines.
- Perhaps a **third message**, but not more than that.
- Outlook
  - Something you haven't solved.
  - Something else you haven't solved.

# For Further Reading I

-  A. Author.  
*Handbook of Everything.*  
Some Press, 1990.
-  S. Someone.  
On this and that.  
*Journal of This and That*, 2(1):50–100, 2000.