# Incorporating a graph-matching algorithm into a muscle mechanics model

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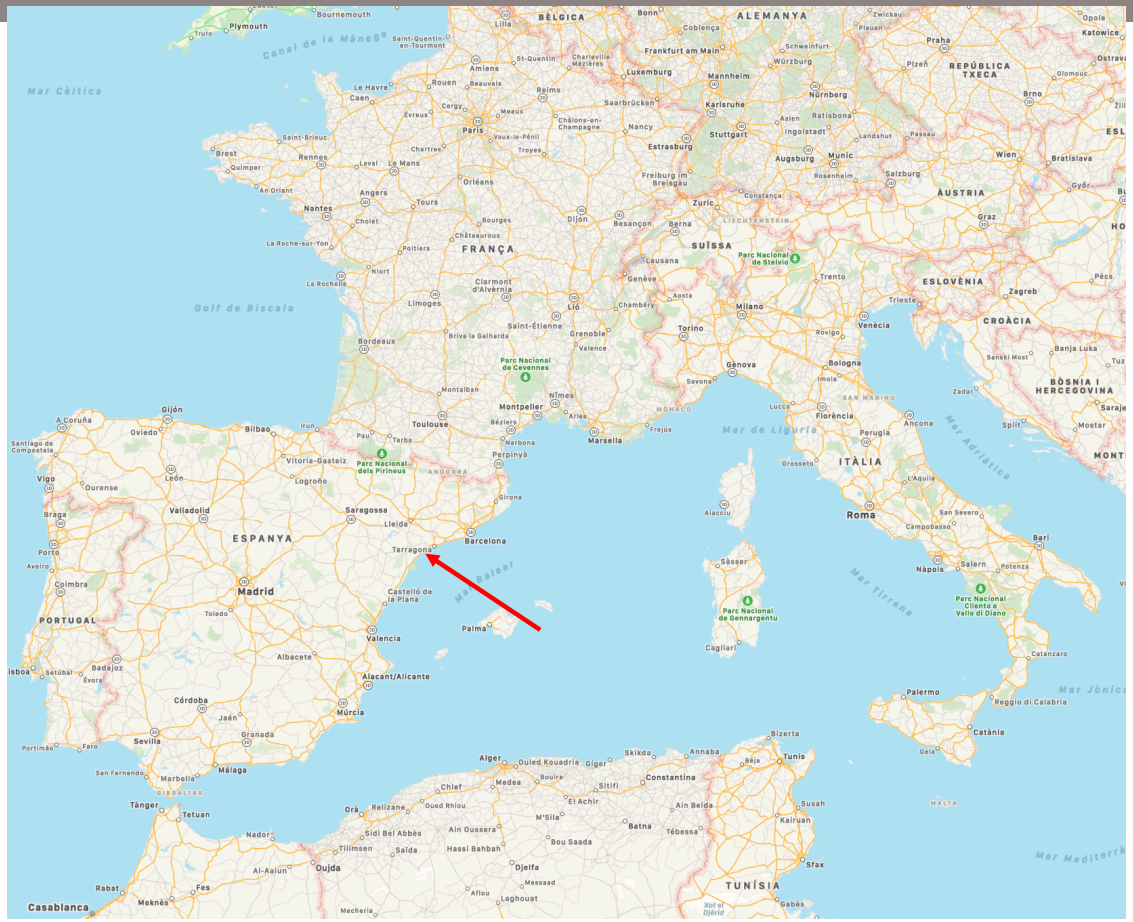


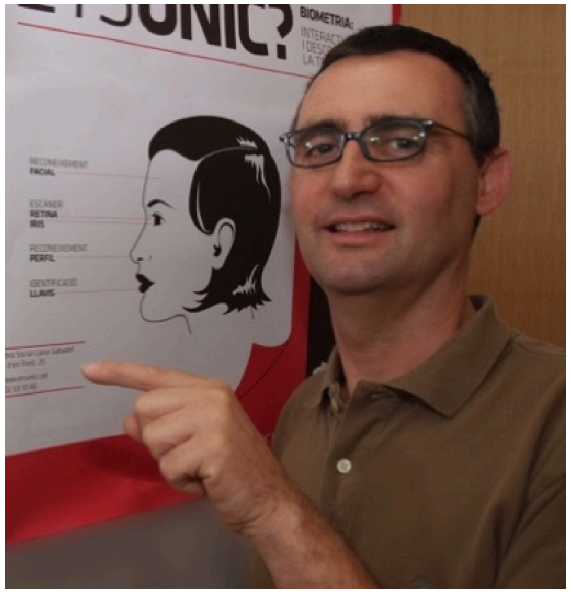

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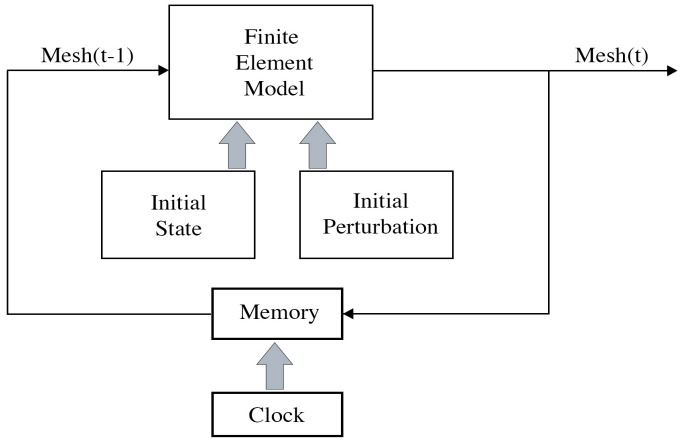
# Introduction

**Simulation** of the **muscle mechanics:**

- **Based on Differential models**
  - **Iteratively** updating a mesh grid
  - Deduce its new state through a **finite element model**.



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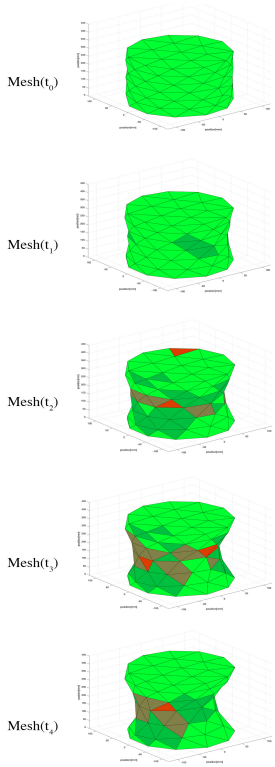
# Introduction

Models usually **assume** that:

- The mesh grid is **almost regular**

**This assumption** makes a degradation of the simulation **accuracy** in long simulation sequences.

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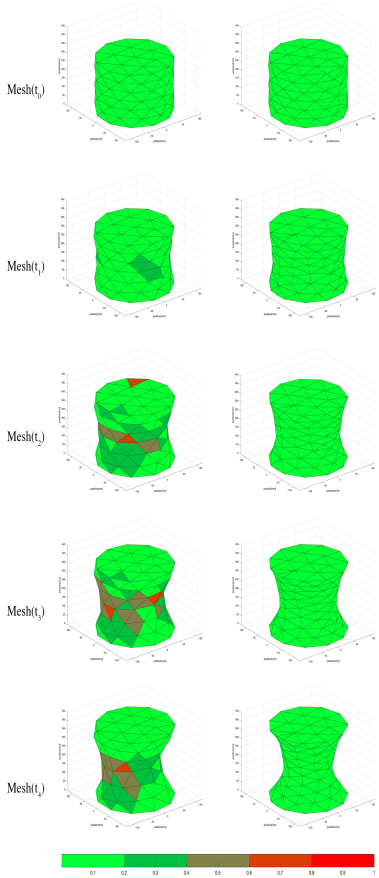
# Introduction

Aim of **our** model:

- To reduce the accuracy **degradation**.



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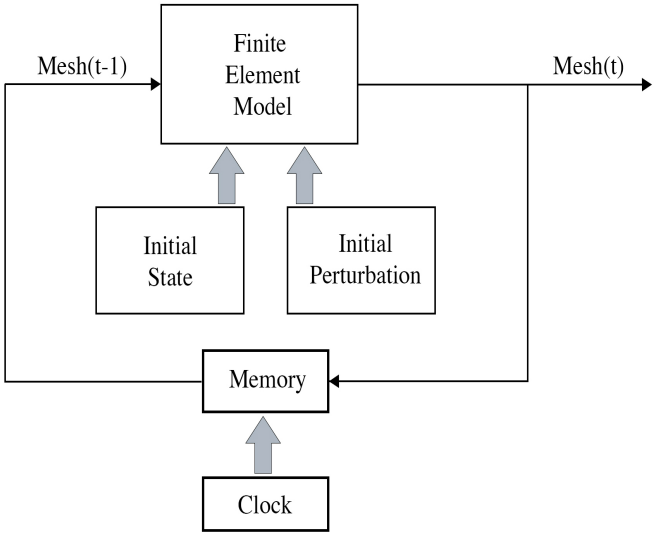
## Classical iterative model



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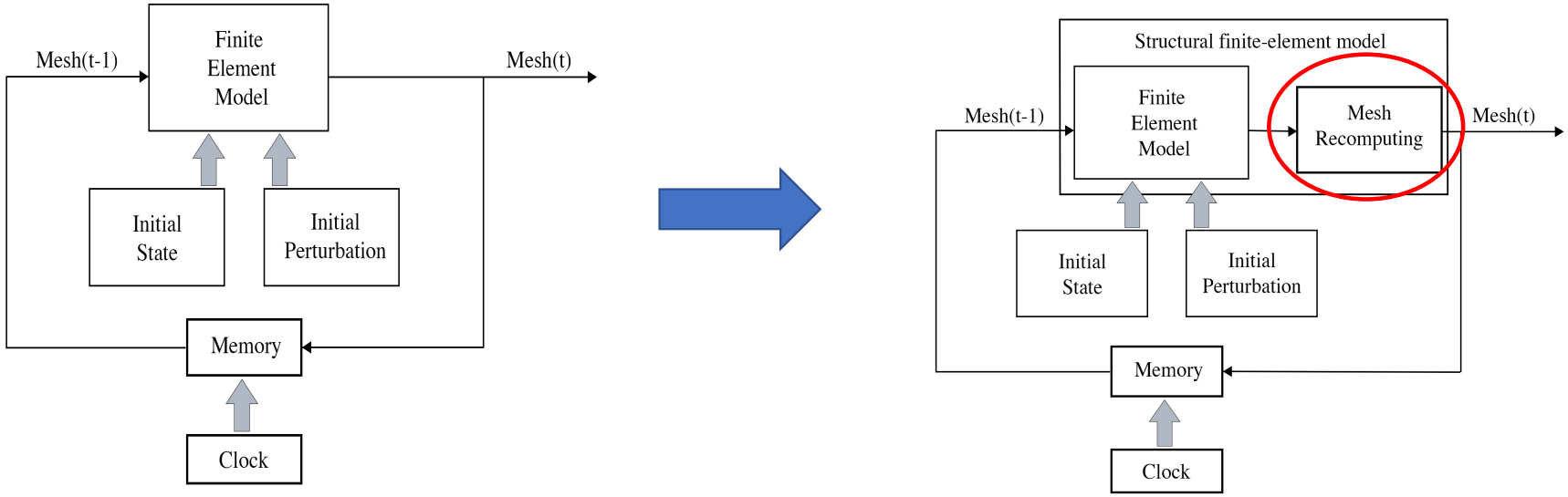
# Our model based on graph matching



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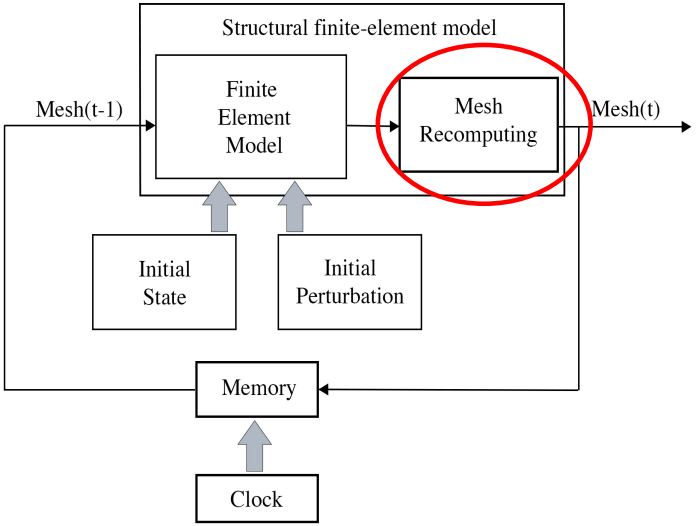
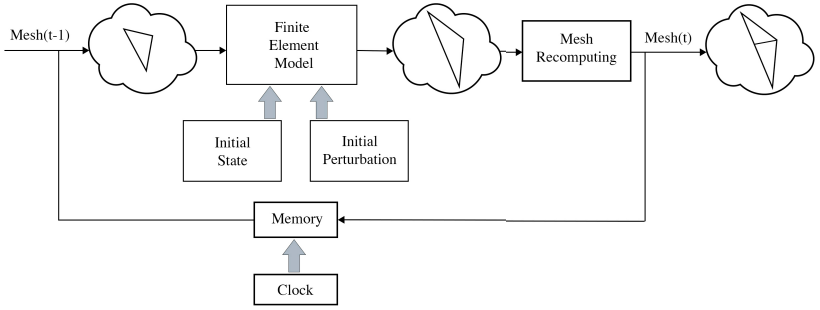
# Our model based on graph matching




Example



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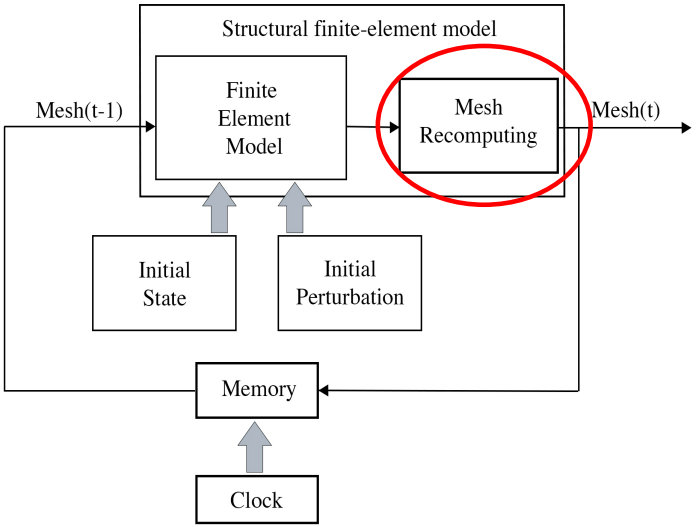


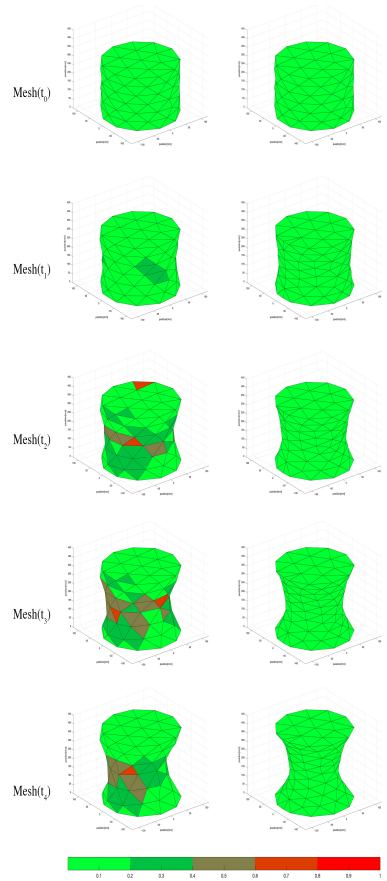

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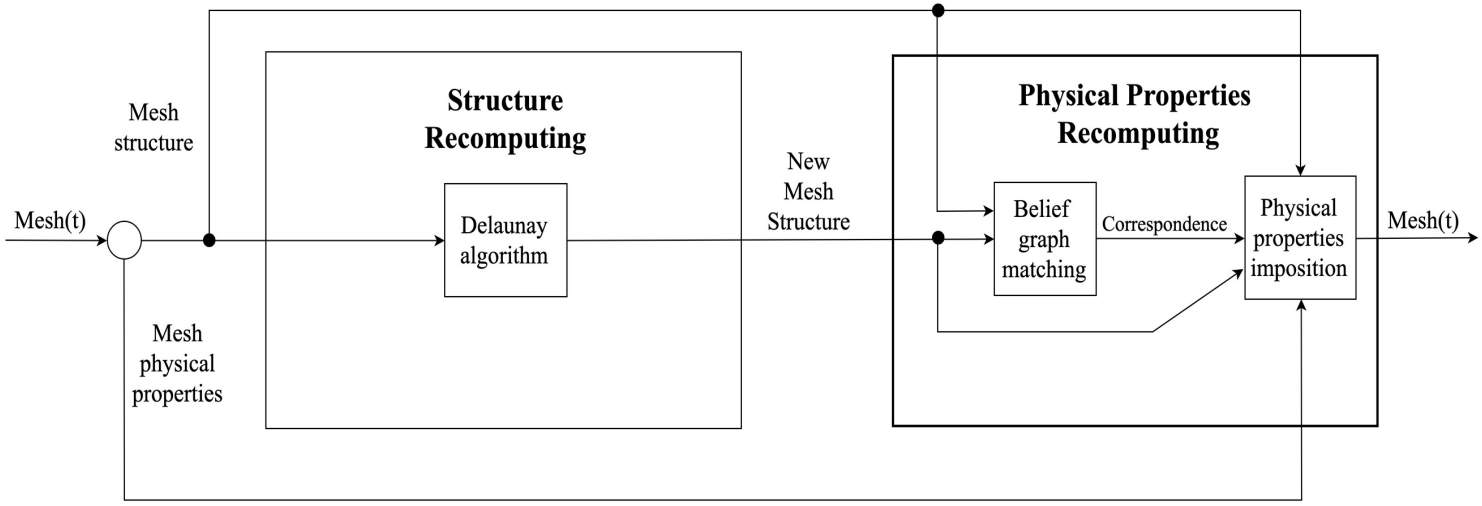

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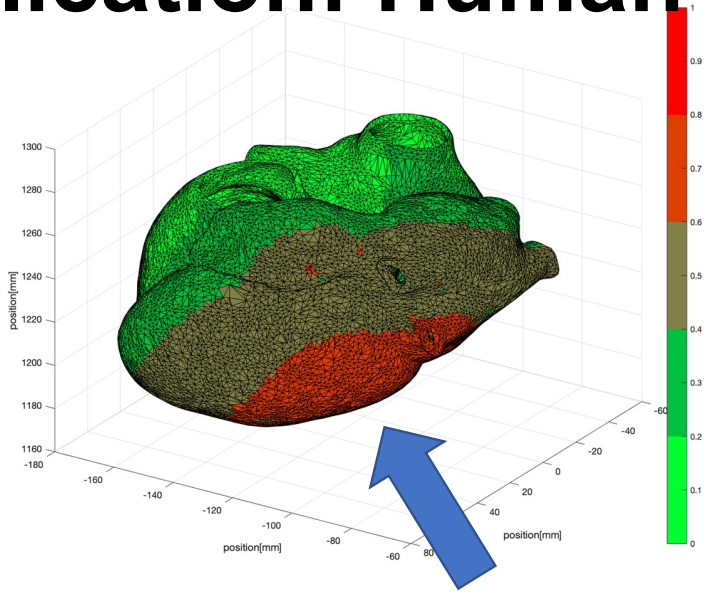
# Application: Human heart mechanics

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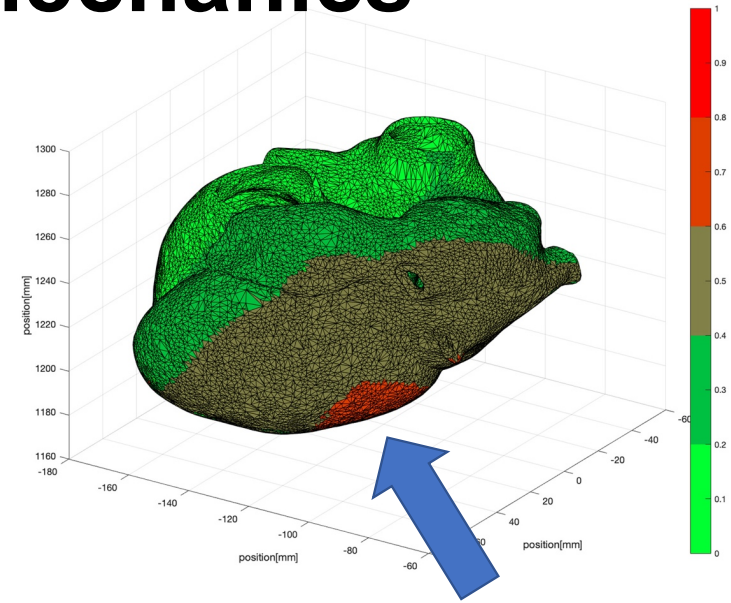


Our model