Chapter A. Introduction

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When performing a FE calculation of a structure, the modeling assumptions as well as the objectives must be defined. Those goals generally consist of solving:

- the displacements caused by a static loading (permanent) quasi-static (without inertial effects) or dynamic (fast-loading,)
- internal state, such as stresses, damages inflicted (cracking, etc.)

Among the modeling hypotheses, it is preferable to handle chronologically:

- the choice of the general formulation,
- the dimensionality of the model,
- the choice of the elements,
- the definition of the interactions with the environment.

A1. A general formulation for linear elastic calculations

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A2. The dimensionality of the model

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A3. The choice of the FE

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A4. Interaction between the structure and its environment

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A5. Estimation of the quality of the approximated numerical solution

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