

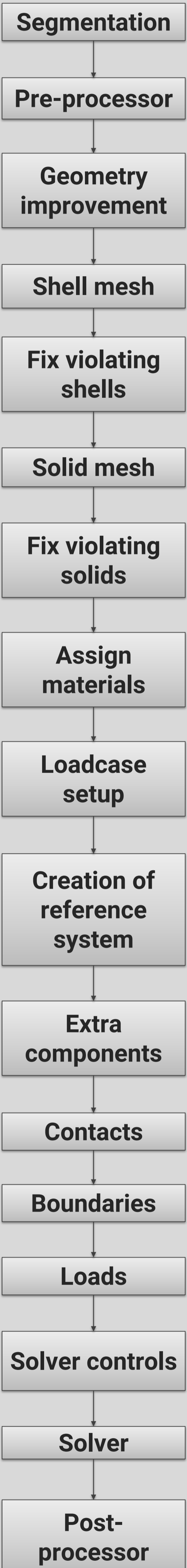
Advanced techniques for generating patient-specific parametric Finite Element models

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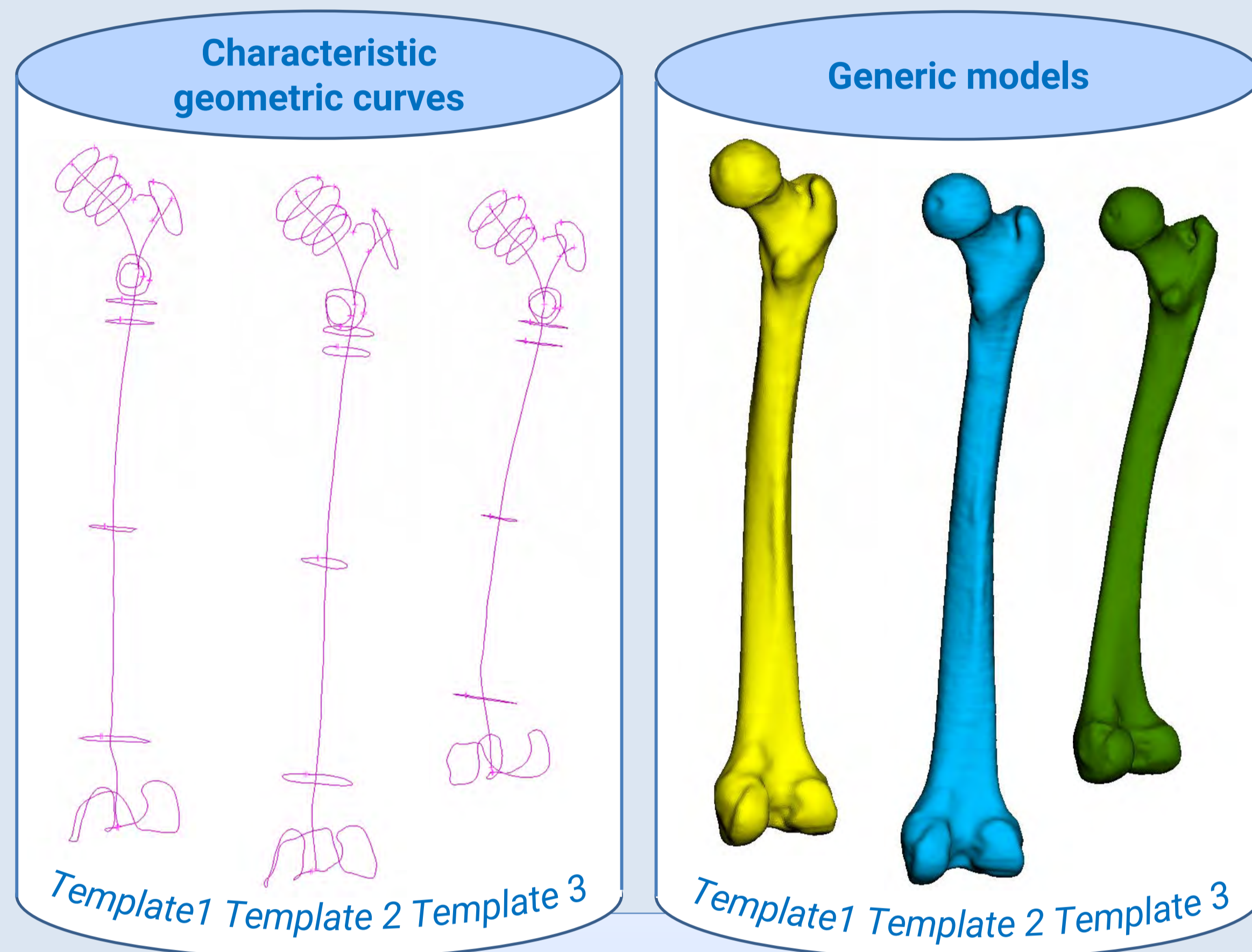
Problem:
Bone modeling is a time consuming process

Solution:
Time reduction through the parameterization and reuse of models

Legacy Process



New Process



Patient-specific model



Pre-processing

- Geometry improvement
- Parameterization
- Geometry morphing tool
- Fix violating elements
- Assign materials
- Loadcase setup

Solving

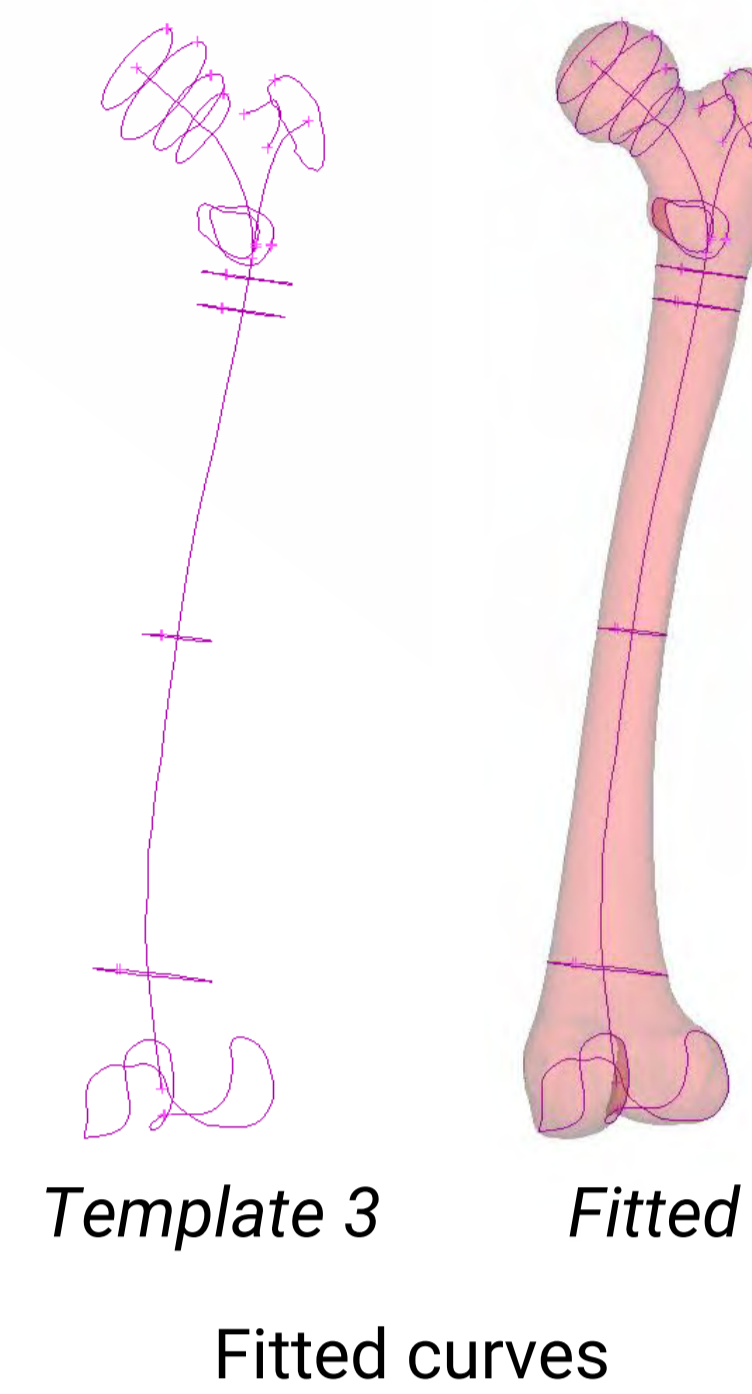


Post-processing

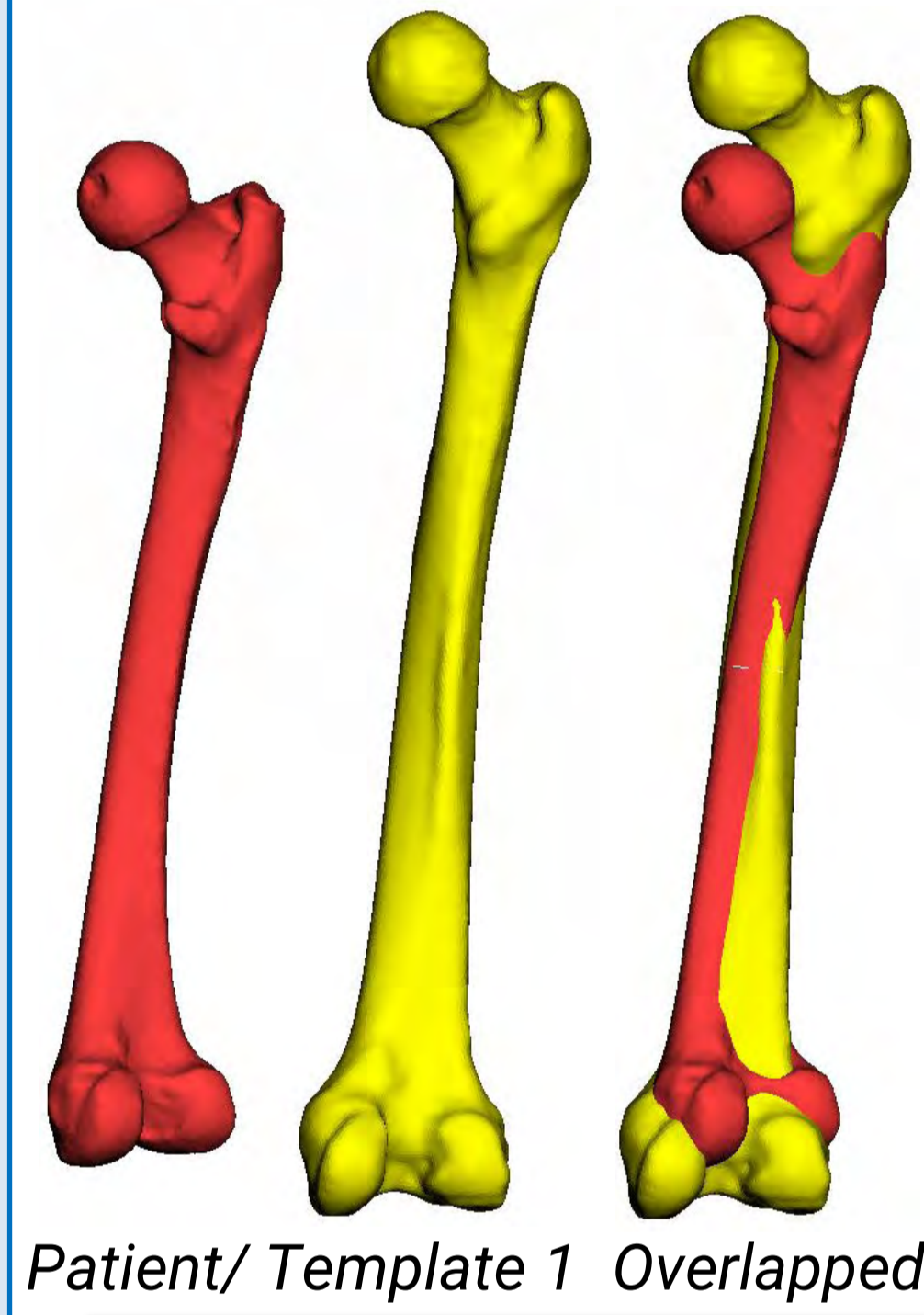
Benefits:

- Fast simulation setup, with few controls
- Minimal user interaction
- Reusability of models

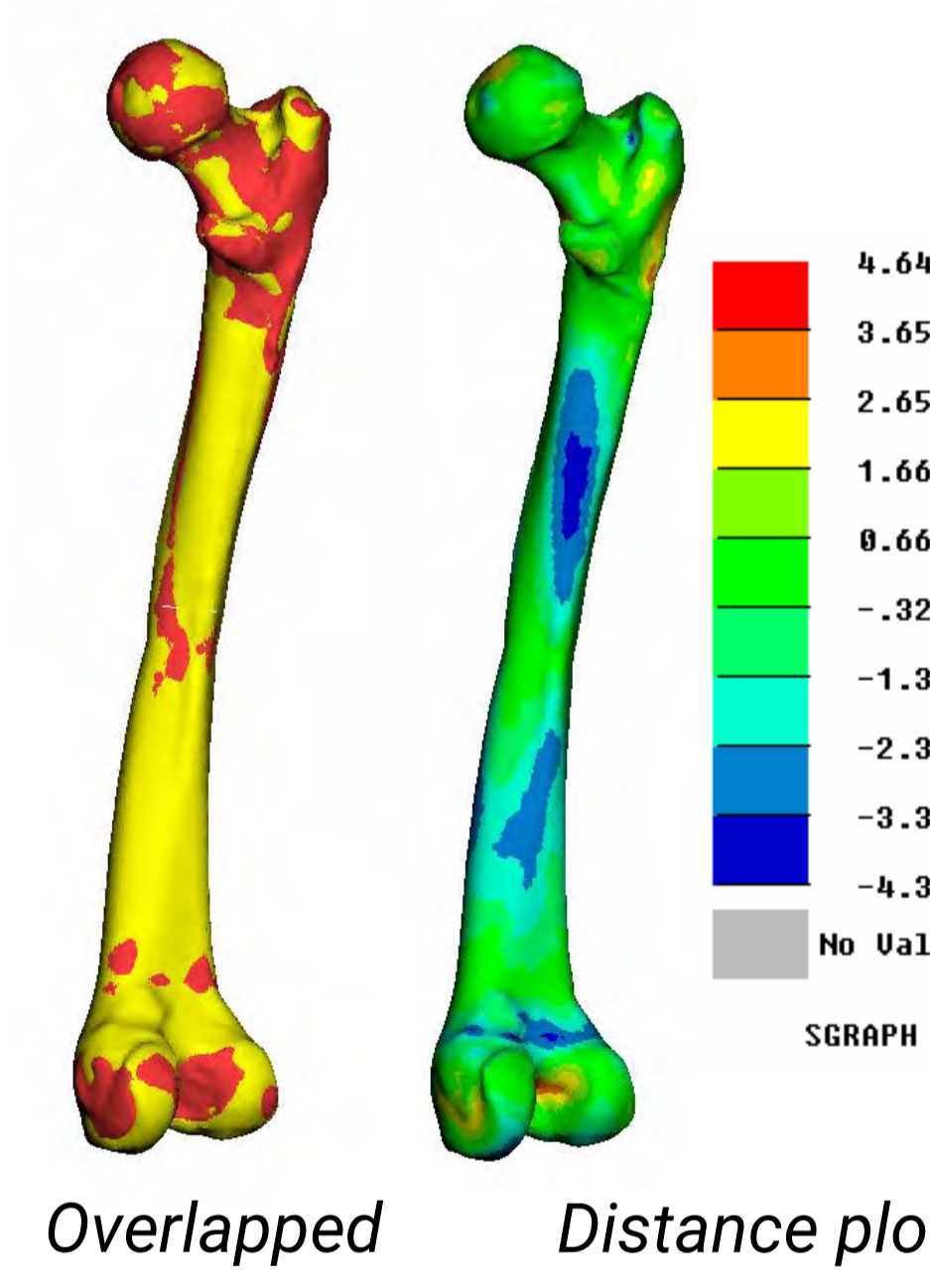
1. Parameterization



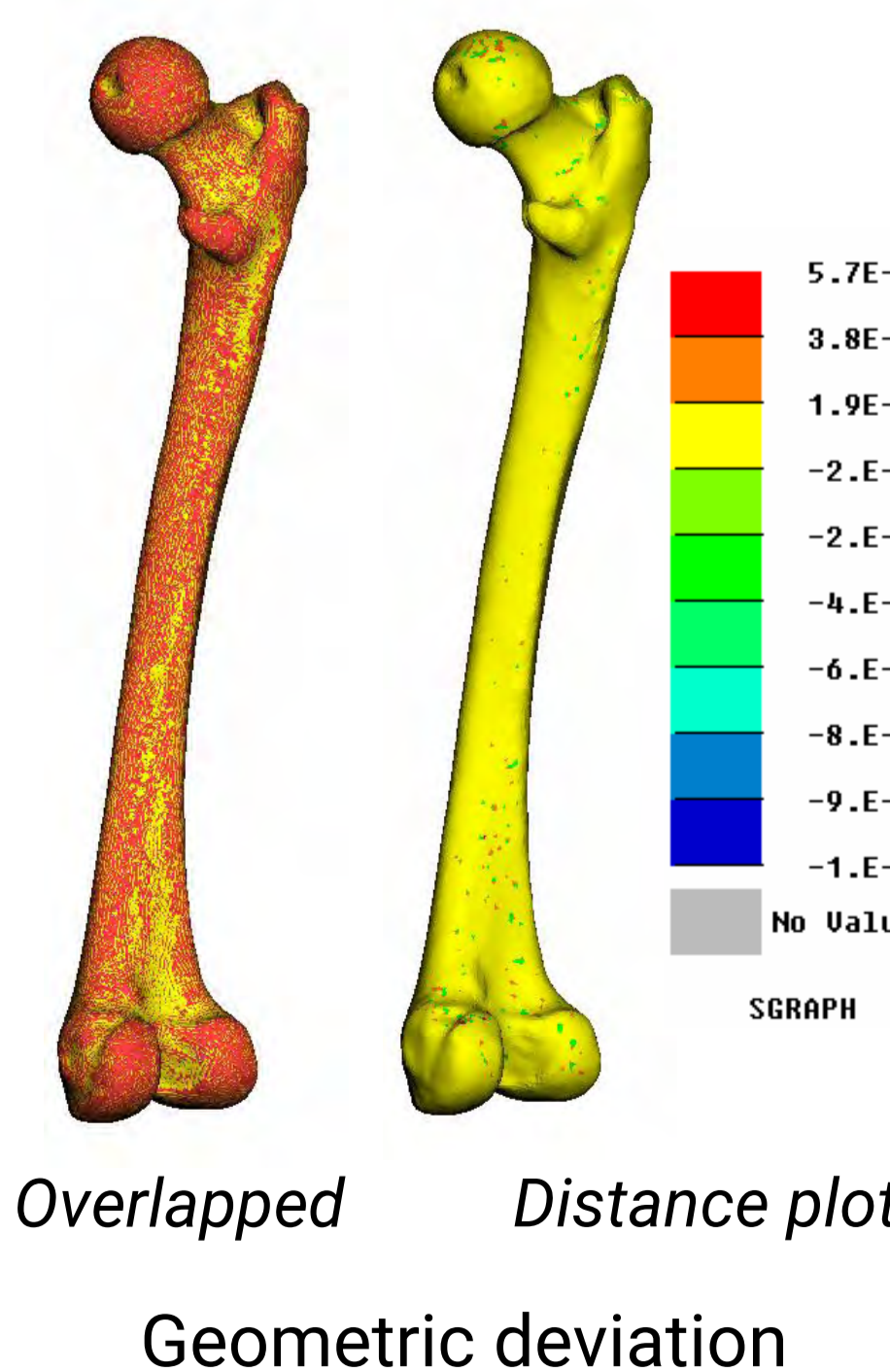
2. Compatible generic model



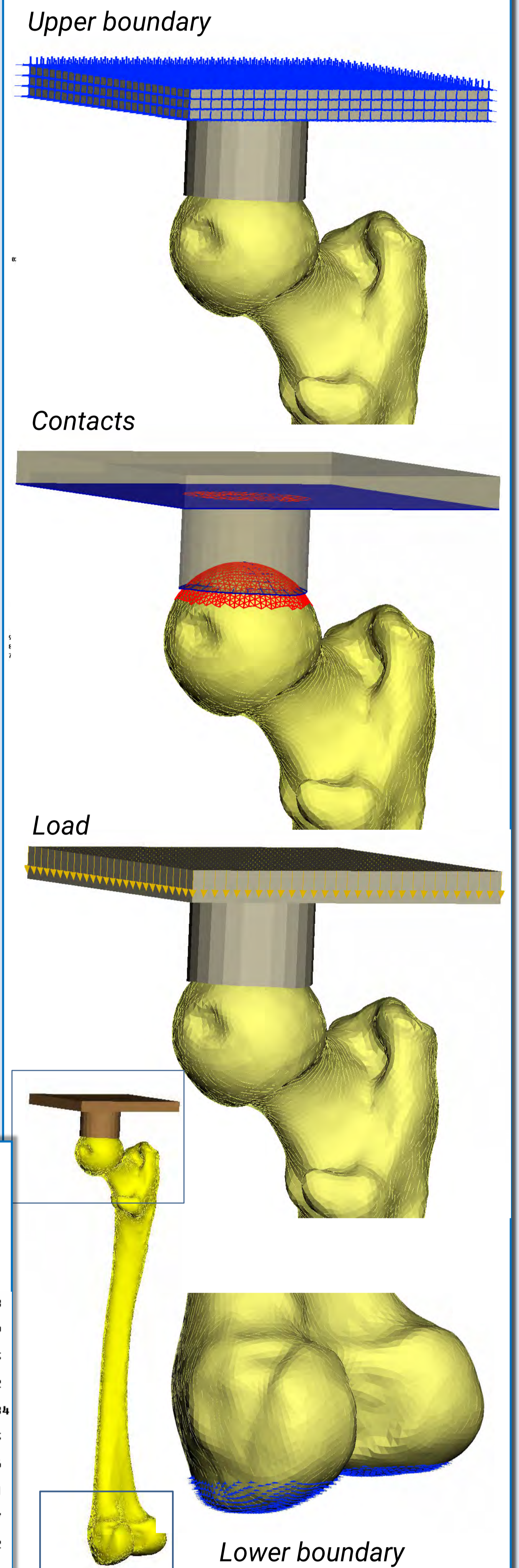
3. Geometry Morphing # 1



4. Geometry Morphing # 2



5. Loadcase setup with reusability of initial and boundary conditions



6. Post-processing Inspection of results

