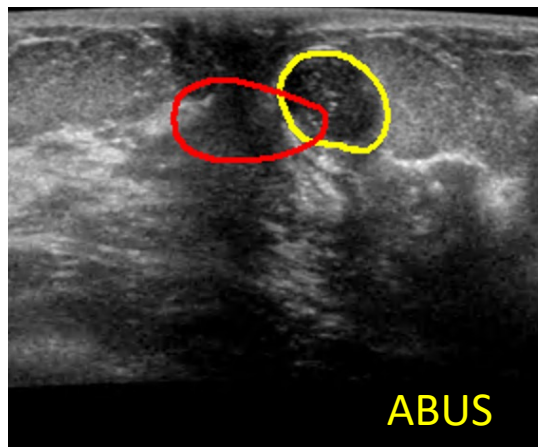**Image Acquisition and Pre-Processing**
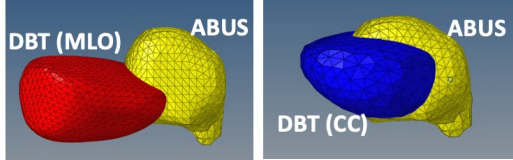
Automated Deformable Mapping Algorithm

Registration Results

ABUS

ABUS
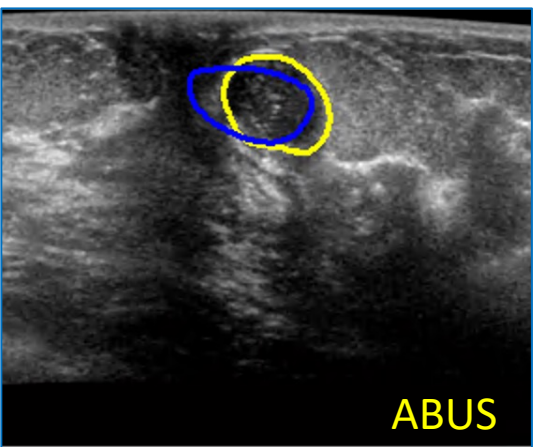
5. Lesion Correlation
- Determines matching lesions
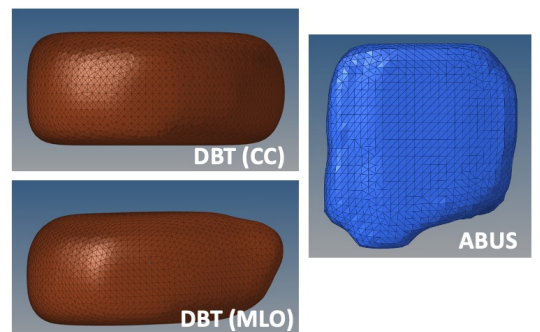- Computes d_{COM} and quantifies registration overlap

DBT (MLO) ABUS

ABUS DBT (CC)

4. Finite Element Analysis
Applies FE analysis on DBT Model

DBT (CC)

DBT (MLO)

Automated Deformable Mapping Algorithm
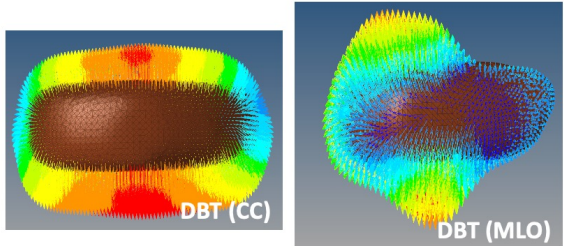
1. FE Model Generation
- Converts segmentations to create Base FE model
- Adds Material properties

DBT (CC)

ABUS

DBT (MLO)

2. Skin Deformation
- Transforms skin of DBT (CC or MLO) model to ABUS model
- Determines boundary conditions for FEA
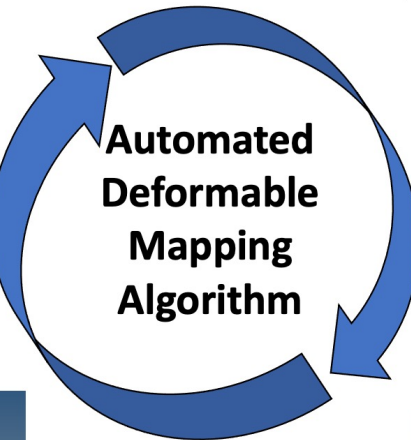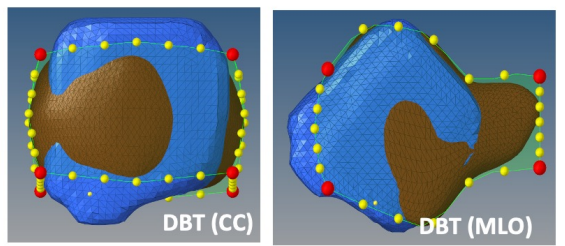
3. Marker Correlation
- Modifies boundary conditions of DBT model to ensure corresponding markers are within user-defined distance

DBT (CC)

DBT (MLO)

DBT (CC)

DBT (MLO)