**Statistical parameter inference of a 3D solid breast texture model from clinical breast computerized tomography data for the simulation of x-ray breast images**

- Introduction, motivation
  - Background: x-ray breast imaging, virtual clinical trials & breast texture models
  - Description of the 3D stochastic solid breast texture model
  - WHY: describe the limitation of the prototype implementation with empirical parameters (IWDM)
- Problem statement
  - Mathematical formulation of the medium scale texture model
  - Description & formulation of the ground truth data
- Methods
  - Classical statistical inference approaches
  - The inference from reconstruction approach
  - Reconstruction step:
    - Multiple, births, deaths & shifts algorithm
  - Inference step:
    - Fitting ellipsoid centers to a Matern cluster PP
    - Fitting shape parameters of ellipsoids
- Results
  - Reconstruction results:
    - visualization of reconstructed volumes with ellipsoids.
    - Visualization of convergence curves.
  - Inference results
    - PCF of ellipsoid centers & envelope test for fitted Matérn PP
    - Histograms of ellipsoid shape parameters
- Model validation
  - Statistical validation: beta measurement
  - Observer / visual validation:
    - Design & implement 2AFC as in IWDM (comparison with images simulated from bCT VOIs).
- Conclusion & discussion