



Contribution ID: 62

Type: **Poster**

Ultrastructural Bone Phenomics using High Throughput Synchrotron-based X-Ray Tomography

Thursday, 15 September 2011 13:25 (2 minutes)

Osteoporosis leads to a higher risk of bone fracture through decreased bone mass and architectural changes leading to decreased bone quality. While bone mass through bone mineral density (BMD) is the most important factor in assessing fracture risk, introducing architecture through morphological parameters in cortical femur bone, one of the most problematic and debilitating fracture regions, can significantly increase the predictive power. Correlating these findings with genetic information would provide the basis to begin human studies and eventually personal medicine assessing risk and targeting therapies based on genetic information. Although structural studies of cortical microstructure have been previously conducted with x-ray tomography, sample counts have typically been small. In order to map the genetic contribution, thousands of samples are needed. For our study we are using the femur bones from 1200 mice of controlled genetic background. To enable this study we developed automated measurement (robot, alignment, ROI detection) tools in combination with automated analysis (segmentation, morphological analysis) and a system to track samples through the entire process.

Please specify the session

Imaging

Please specify poster or talk

poster

Primary author: Mr MADER, Kevin (Paul Scherrer Institute)

Co-authors: Prof. STAMPANONI, Marco (Paul Scherrer Institute); Dr SCHNEIDER, Philipp (ETHZ); Prof. MÜLLER, Ralph (ETHZ)

Presenter: Mr MADER, Kevin (Paul Scherrer Institute)

Session Classification: Poster session I and lunch

Track Classification: Poster Session I (Thursday)