

# Seminar

Friday, 26<sup>th</sup> March 2010

3 p.m. - Room 701

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## ***New Insights in Medicine from X-ray Physics***

X-rays have been used for medicine for over 100 years and their use continues to increase dramatically.

Modern X-ray facilities such as the Imaging and Medical Beamline of the Australian Synchrotron enable new methodologies that are yielding new insights into physiology and disease.

For example, lung diseases are one of the leading causes of death in adult humans. These diseases commonly result in pathologies within the distal airways that are challenging to detect, especially during the early stages when treatments are likely to be most efficacious. To address this problem, we have combined synchrotron phase contrast x-ray imaging with particle image velocimetry to create a method capable of producing time resolved tomographic vector maps of lung motion in live animals. The technique is capable of detecting subtle variations in the motion of regions of the lung. Since many diseases affect the mechanical behaviour of lung tissue it is believed that changes in the lung motion will be a predictor of disease.

This and other examples will be presented on the way that X-ray physics continues to play a significant role in medical research.

*All Welcome*

### Contact Details

For further information phone 364 2404, or visit our website: [www.phys.canterbury.ac.nz](http://www.phys.canterbury.ac.nz)