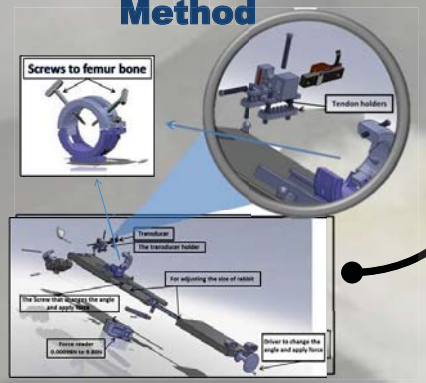
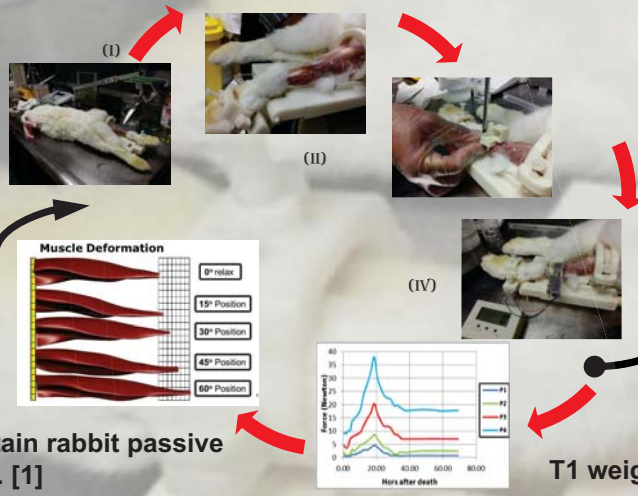
AUCKLAND BIOENGINEERING INSTITUTE
THE UNIVERSITY OF AUCKLAND NEW ZEALAND

The influence of fibre structure on gastrocnemius mechanics: informed through DTI and Ultrasound

Massoud Alipour, Kumar Mithraratne and Justin Fernandez

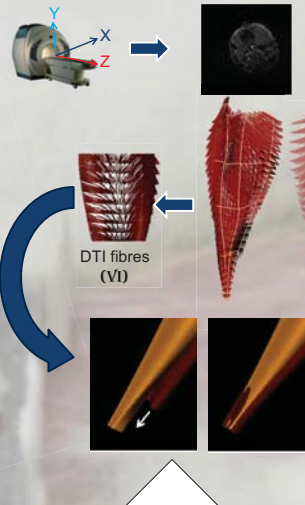
Method

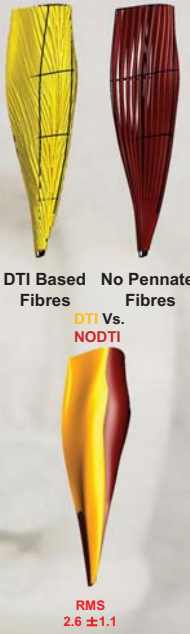




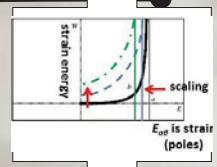
MR compatible rig was built to obtain rabbit passive material properties. [1]

T1 weighted geometry





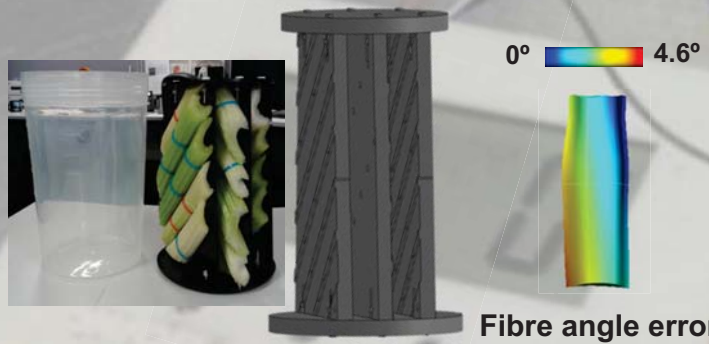
DTI sequences were used to define muscle Architecture and contractile shape [2]



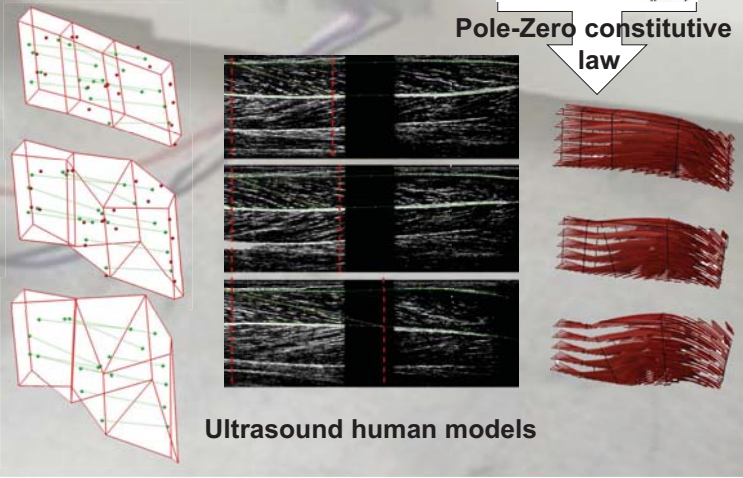
Pole-Zero constitutive law

Quantifying DTI ERROR

Validation using a celery phantom quantified the error in our DTI processing along the length of the MR coil



Fibre angle error



Ultrasound human models

References

1. Van Ee, C., A. Chasse, and B. Myers, Quantifying skeletal muscle properties in cadaveric test specimens: effects of mechanical loading, postmortem time, and freezer storage. Journal of biomechanical engineering, 2000. 122: p. 9

2. Westin, C.F., et al., *Processing and visualization for diffusion tensor MRI*. Medical image analysis, 2002. **6**(2): p. 93-108.

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