

Anatomically informed dynamic and heterogenous lung and bone architecture for human phantoms

Value Proposition

The introduction of nuclear medicine has dramatically changed the way in which doctors diagnose and treat patients. Despite these great improvements, in each moment of application patients accept unintended damage to the surrounding tissues. In some particular cases, these costs outweigh the benefit of radiation exposure. Thus, the computational human phantom was created – a virtual patient that models the patient’s anatomy serving as a reusable test dummy to optimize treatment. However, due to a lack of sub organ structural modelling capability, the applicability of these phantoms is limited.

Technology

This IDF describes a method to model the underlying bone structure (trabecula) using a small data set of clinical CT images.

Advantages

One main advantage of this technology is the ability to adapt this model to different types of computational phantoms (i.e. volume based models or wire frame models)

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