

iVAS supports radiotherapy planning system using deformable image registration



RT-Viewer



This viewer can show dose mapping and structures from all radiotherapy planning system. 3D graphic and dose-volume histogram (DVH) is achieved by high-speed processing system.

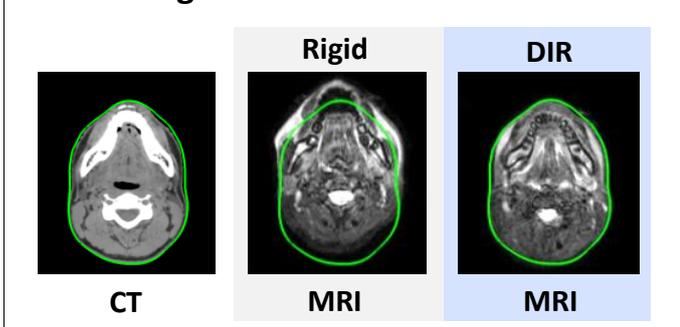
Supporting radiotherapy planning system using DIR

Highly precise Deformable Image Registration (DIR) with B-spline algorithm is implemented in this software. DIR is able to deform CT and MRI image to correspond to each sites. In addition, dose warping can be performed by the DIR to add the two dose distributions in different CT images. DIR also can be used to calculate the lung functional image by quantitative analysis of displacement vector field.

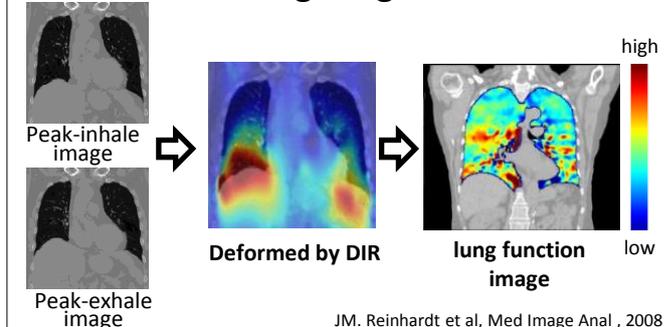
Creating combined dose mapping

<div style="border: 1px solid gray; border-radius: 10px; padding: 5px; display: inline-block;">Rigid</div>	<p>Subtracted image</p>	<p>Initial Plan (Rigid)</p>	<p>Boost Plan</p>	<p>Sum Plan</p>
<p>Without DIR, position alignment shows difficulty</p>				
<div style="border: 1px solid pink; border-radius: 10px; padding: 5px; display: inline-block;">DIR</div>	<p>Subtracted image</p>	<p>Initial Plan (DIR)</p>	<p>Boost Plan</p>	<p>Sum Plan</p>
<p>With DIR, integrated dose alignment is possible</p>				

Alignment with CT & MRI



Evaluating Lung Function



JM. Reinhardt et al, Med Image Anal, 2008

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