

VelocityAI (Velocity Medical Solutions, Atlanta, GA), is one of the commercially available imaging software tools that includes automated deformable image registration, contouring capabilities, and atlas-based segmentation. Automated deformable image registration can improve the efficiency and quality of radiation therapy planning by making it possible to fuse treatment planning images to a set of images that were not acquired in the treatment position. Additionally, contours can be transferred to a new set of images and deformed. This is very useful when a patient is replanned during the course of their treatment. The atlas-based segmentation allows adaptive contouring to adjust contours, which has the potential to reduce contouring time. Additional enhanced contouring tools have also been designed to increase efficiency.

This lecture will provide an overview of the technical aspects of Velocity, clinical implementation, and the future direction of the Velocity software. Clinical issues to be discussed include capabilities of Velocity registration and contouring tools, usefulness of atlas-based segmentation, and clinical examples of the strengths and limitations of the Velocity software.

Educational Objectives:

1. Understand the technical implementation and future direction of the Velocity software
2. Understand the issues related to automated deformable image registration
3. Understand the issues related to clinical application of atlas-based anatomical segmentation

One of the presenters is an employee of Velocity Medical Solutions, Atlanta, GA.