

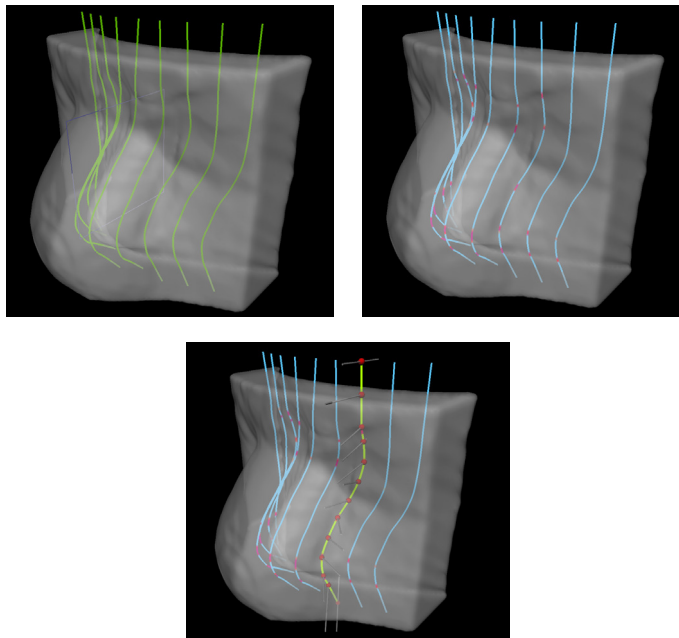
# Enhanced HDR Surface Brachytherapy v2.0

We have improved the way catheter tunnels are generated in the HDR (high dose rate) surface brachytherapy module. The tunnels are calculated from the closest point on the surface of the patient's body and several adjustments can be made to reduce the possibility of discontinuities in the generated catheter trajectories.

Enhancements to the module's algorithm allows users to quickly and confidently create patient-specific applicators that provide a superior dose distribution compared to other existing methods.

## Key Benefits

- Catheter tunnels generated with a radius of curvature less than 13mm are now highlighted in blue (with red nodes) to ensure the user is aware of potential problems when fitting catheters into the 3D printed object. A user is able to adjust the tunnels to ensure source clearance.
- Generating catheter tunnels based on body contour is now more accurate. A user can select 'body' as a structure in the software, thus utilizing the specific surface contour of the patient to generate customized tunnels.



The images above show the steps involved in adjusting generated catheter tunnel trajectories. When green lines turn blue (with red nodes), this means these catheter tunnels are problematic sections due to a minimum curvature radius of less than 13mm. These blue/red lines are clickable, allowing a user to move the spherical nodes forward or backward to correct the curvature to an acceptable range, ensuring the catheter source will not get stuck.



“The limitations of using wax are even worse in brachytherapy cases due to the added complexity of embedding the catheters. Because of the opacity of wax, it can be difficult to verify both the distance from the surface and the spacing between catheters. Fabrication is extremely time consuming and can be done only by the most experienced staff. **The Adaptiiv solution addresses all of these problems and will increase our capacity to use surface brachytherapy. At present, this is the only commercially available solution.**”

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