Skin Collimator Creation

A skin collimator is an optional device for each electron treatment beam. In the Collimation block, the user can create and edit skin collimators for the selected beam as well as edit values for an existing collimator. From within the Electron Beam Task you may add a skin collimator to a beam by clicking the “Use Skin Collimation” checkbox from within the Collimation Block.

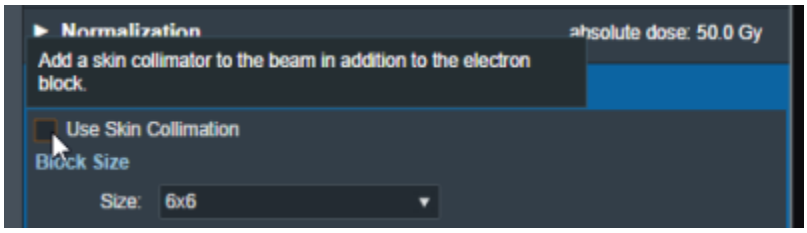

Fig. 1: Skin Collimation Checkbox

A note regarding the use of skin collimation with bolus

Skin collimation can be added to any beam and used with any bolus type, however, only an Optimized Thickness Bolus will automatically conform its shape to correctly account for the presence of a skin collimator. Therefore, caution must be used with all other bolus types as the user must manually review the bolus and skin collimator to ensure there is an appropriate fit (e.g. no overlap, interference, or unwanted air gaps) between the skin collimator, bolus, and patient surface.

Collimator Thickness

- **Thickness:** The value (in cm) of the thickness of the skin collimator from the surface of the patient external structure.

Note: The default Thickness value is automatically calculated based on the beam energy. To edit the thickness, click the “edit” control to the right of the thickness value. The app will automatically recalculate and display changes to the skin collimator as the thickness is edited.

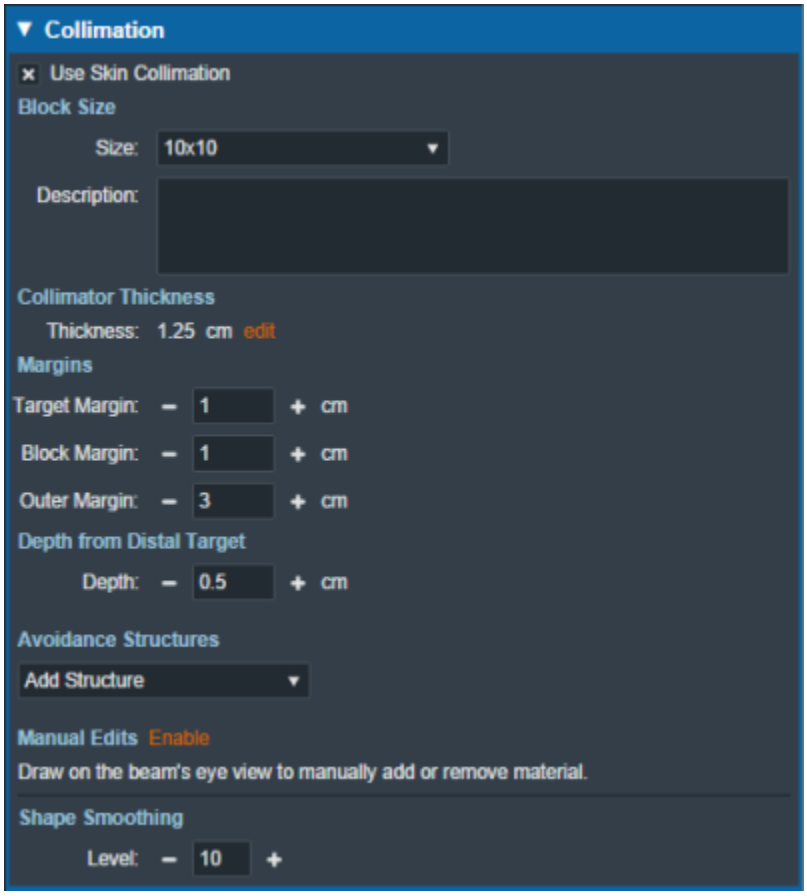

Fig. 2: Skin collimator controls

Margins

- **Target Margin:** The value (in cm) of the margin around the target structure as projected to isocenter. A negative margin can be used to specify a contraction around the beam target while positive values will cause an expansion.
- **Outer Margin:** The value (in cm) of the margin between the skin collimator opening shape and the outer shape of the collimator as projected to isocenter. A negative margin can be used to specify a contraction of the outer skin collimator shape while positive values will cause an expansion.

Note: The app will automatically recalculate and display changes to the skin collimator as the margins are edited.

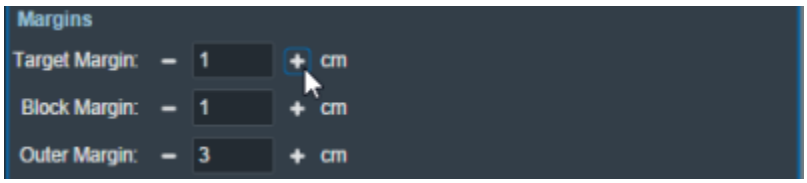

Fig. 3: Skin collimator margins

Depth from Distal Target

- **Depth:** The value (in cm) of the depth from the distal side of the beam target that is used when calculating the skin collimator 3D shape. Adjusting this value can help improve the skin collimator shape in some situations.

Note: The app will automatically recalculate and display changes to the skin collimator as the depth from distal target is edited.

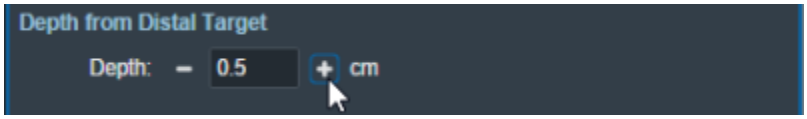

Fig. 4: Skin collimator depth from distal target

Collimator Avoidance Structures

Using controls that are shared with electron blocks, the user may select one or more structures in the structure list here to add as an Avoidance Structure. Avoidance structures will decrease the skin collimator opening to remove all areas within the projection of the structure.

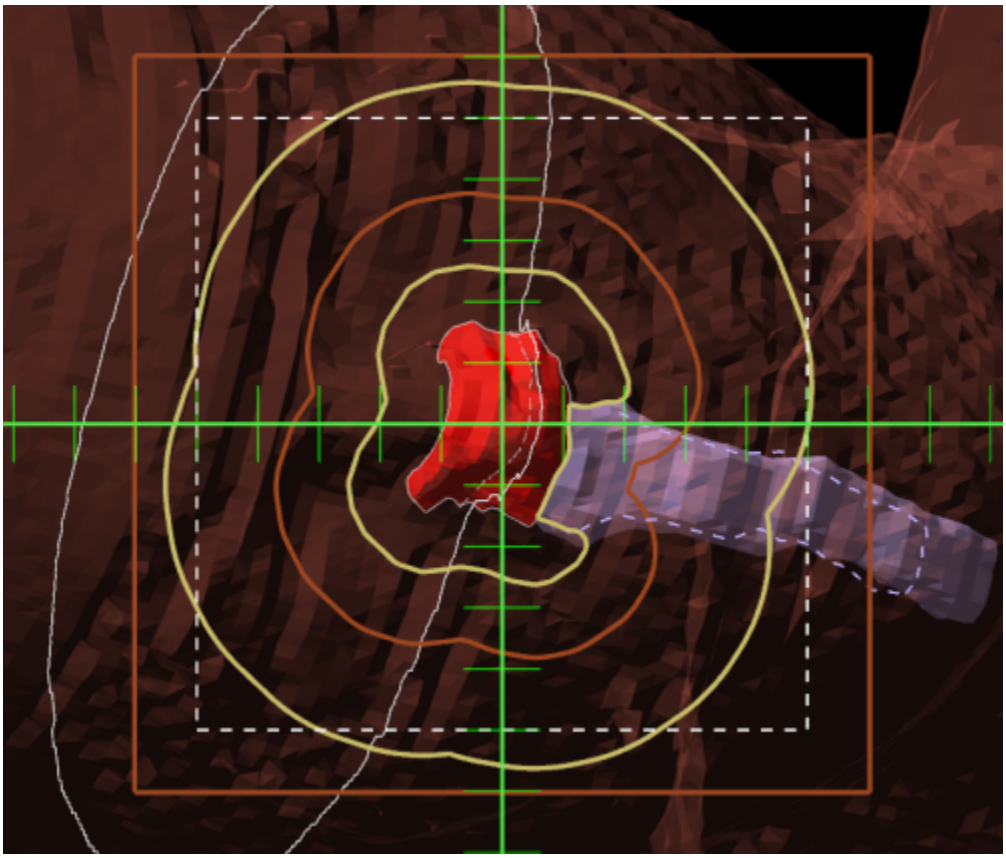

Fig. 5: Skin collimator with avoidance structure

Collimator Manual Edits

By default manual editing of the block shape it disabled, but a user can elect to enable the ability to manually change the skin collimator opening shape in a manner that is identical to Manually Editing the electron block opening shape.

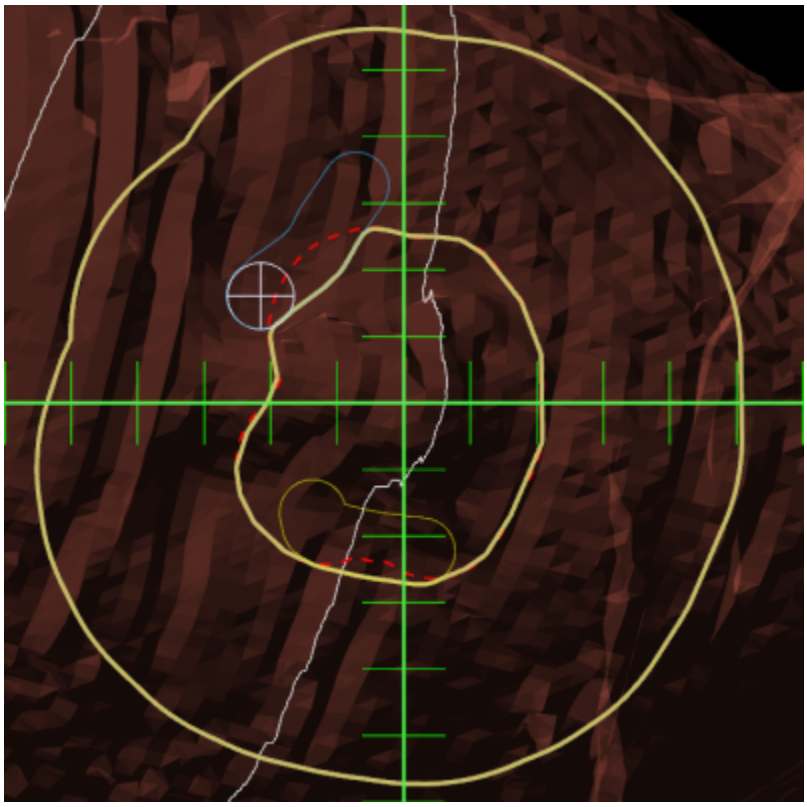

Fig. 6: Skin collimator manual edits

Collimator Shape Smoothing

- **Level:** Sets the level of smoothing applied to the skin collimator opening shape. This does not smooth the patient or beam side surface of the skin collimator.

Note: The app will automatically recalculate and display changes to the skin collimator based on the set smoothing level.

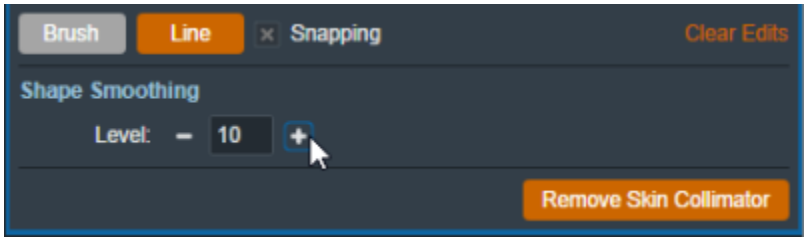

Fig. 7: Setting the smoothing level for the skin collimator