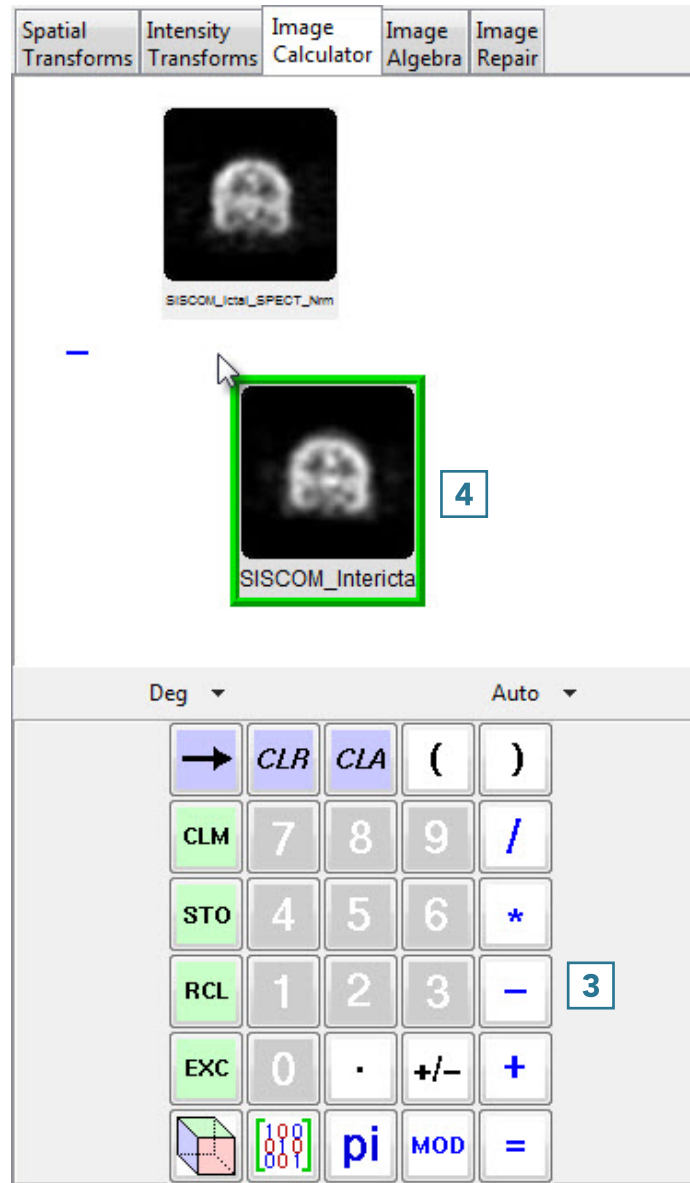# 8. Creating a Difference Map

This exercise will show how to create a difference map showing the areas of higher blood flow to the brain during an epileptic seizure. Interictally (in a non-seizure state), many epilepsy patients exhibit hypoperfusion in the region of the seizure focus. Ictally (during seizure), radiotracers can be injected to produce an image of cerebral perfusion patterns. The difference map between the ictal and interictal SPECT data sets can be used to determine the region of increased activation during seizure.

- The SPECT data inputs for this exercise have already been registered and normalized so that they can be compared.
- Open Transform and navigate to Image Calculator. **1**
- Drag and drop the ictal data set into the calculator window. **2**
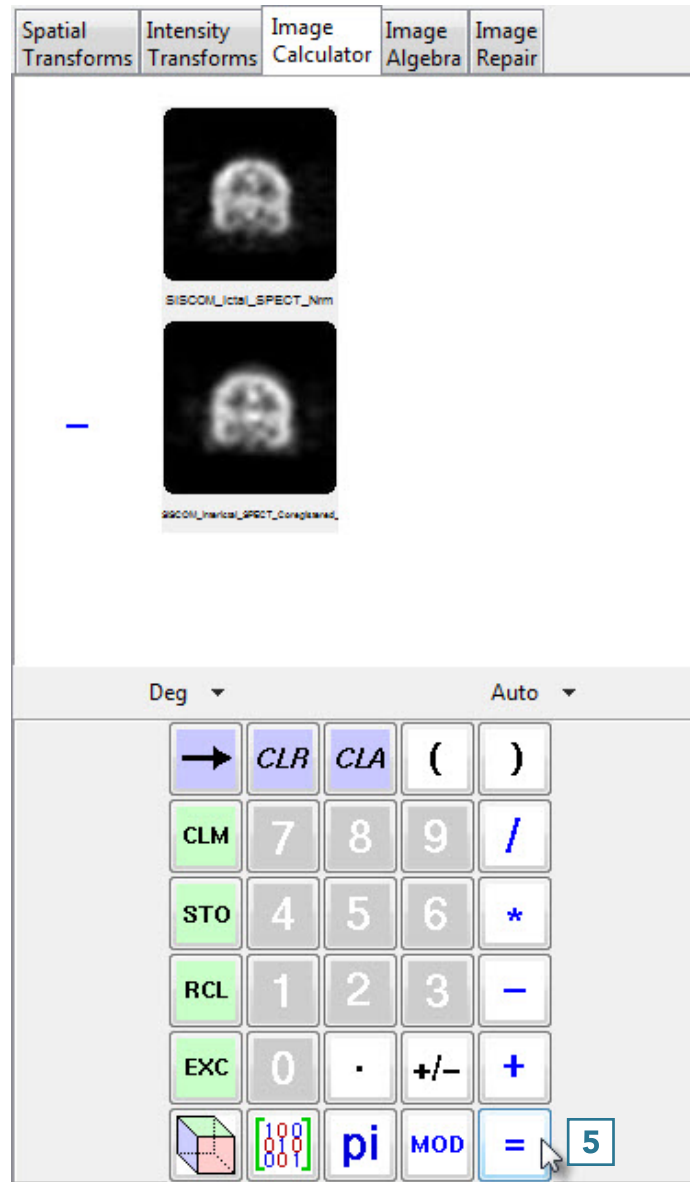
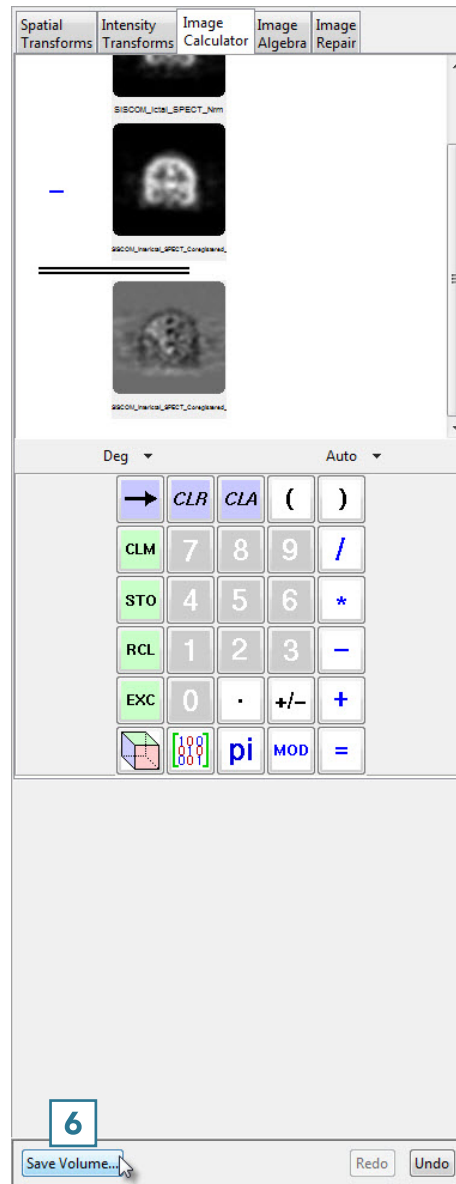Download the SISCOM_Ictal_SPECT_Nrm and SISCOM_Interictal_SPECT_Coregistered_Nrm data sets to follow along
http://analyzedirect.com/data/

- Press the minus key. **3**
- Drag and drop the interictal data set into the calculator window. **4**

• Press the equals key $\boxed{5}$ to complete the subtraction.

• Click Save Volume 6 to save the difference map.

- In the Save Transformed window, choose to create a new workspace volume [7] and rename. [8]
- Click Save Volume. [9]
- Close Transform.

Save Transformed - Transform

○ Replace contents of 'SISCOM_Interictal_SPECT_Coregistered_Nrm'.

◉ Create a new workspace volume. [7]

Workspace Workspace 5 ▾

File Difference_Map [8]

Save Volume [9]