**SIVIC Atlas Based MR Spectroscopy Auto Prescription**

**User’s Guide**

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1. **Contacts:**

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1. **Installation:**

* Verify that there is at least 3GB of space in /export/home, e.g:

df -h /export/home

Filesystem Size Used Avail Use% Mounted on

/dev/sda10 147G 38G 102G 27% /export/home

* Download the latest distribution of SIVIC for the GE scanner console, (sivic\_GE\_console\_version\_Linux\_x86\_64.tar.gz) from sourceforge:

<https://sourceforge.net/projects/sivic/files/0.9.55/sivic_GE_console_0.9.55_Linux_x86_64.tar.gz/download>

* Copy the tar file (e.g., sivic\_GE\_console\_0.9.55\_Linux\_x86\_64.tar.gz) to the sdc home directory (/export/home/sdc) on the console
* Untar the contents and create a link

cd /export/home/sdc

tar -xf sivic\_GE\_console\_0.9.55\_Linux\_x86\_64.tar.gz

ln -s sivic\_GE\_console\_0.9.55\_Linux\_x86\_64 svk

* Download the auto prescription package (svk\_auto\_rx.tar.gz) from sourceforge and copy it to the sdc home directory (/export/home/sdc) on the console
* Untar the package:

cd /export/home/sdc

tar -xf svk\_auto\_rx.tar.gz

* Add button on console (optional):

Add the following xml element to this file (Note that the button may not appear in the console until scanner gets rebooted):

/export/home/sdc/nuevo/resources/browser/Applications.xml

<application allPatients="false" comments="Post processing application" executable="/export/home/sdc/svk/console/packages/Atlas\_Based\_Auto\_MRSI\_Prescription/svk\_atlas\_auto\_mrsi\_start" height="-1" icon="default" instances="1" managed\_window\_desc="default" mode="1" name="SVK Auto MRS RX" order="16" selection="1" tool="n" unmanaged\_window\_desc="default" width="-1"/>

* Note, the user will need to download FSL and dcm2nii (TODO)

1. **Running the auto Rx package**

* Start the SVK Auto Rx GUI by one of the following two methods:
  + If a button was added to the console, click on that (“SVK Auto MRS RX”)
  + If no button was added, open a terminal window and start from the command line:

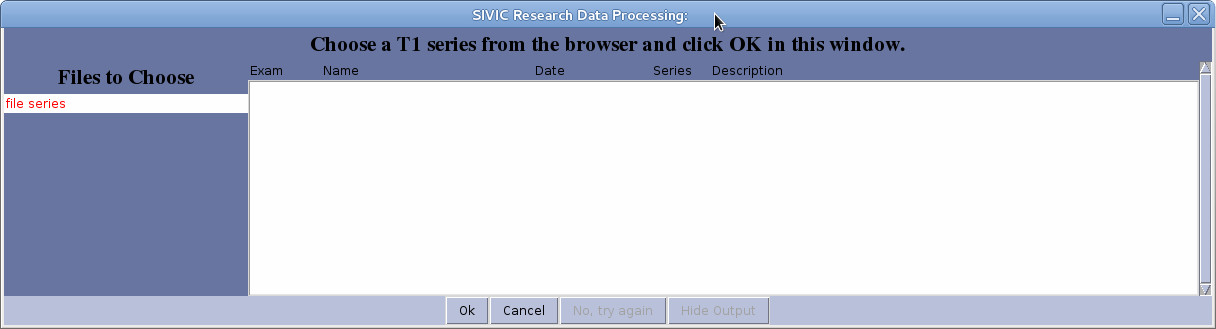
cd /export/home/sdc/svk/console/packages/Atlas\_Based\_Auto\_MRSI\_Prescription

./svk\_atlas\_auto\_mrsi\_start

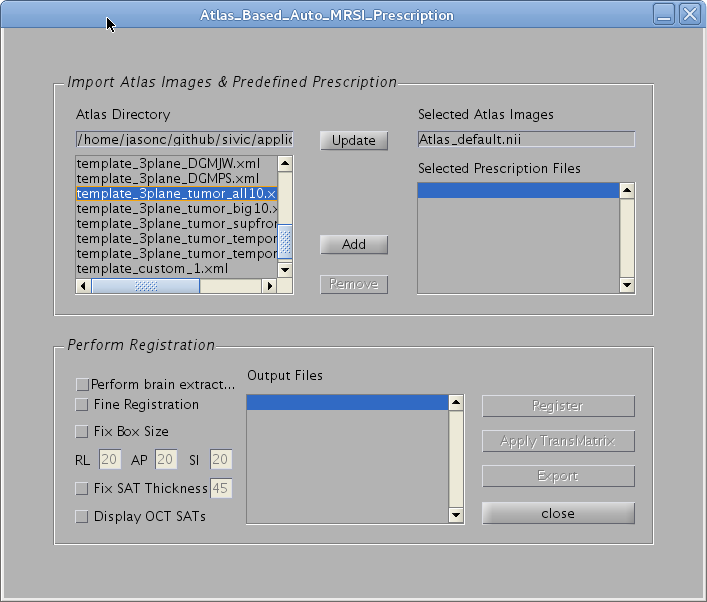
* When the GUI pops up select a T1 series from the console’s data browser. This is the series the prescription will be aligned to:



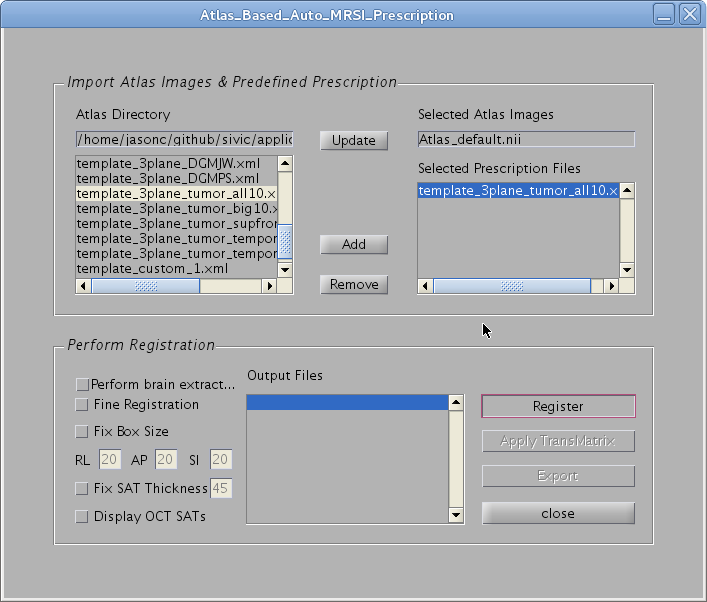
* After the series is highlighted in the console, click on the “OK” button, verify the selected series and click on the “Run” button.



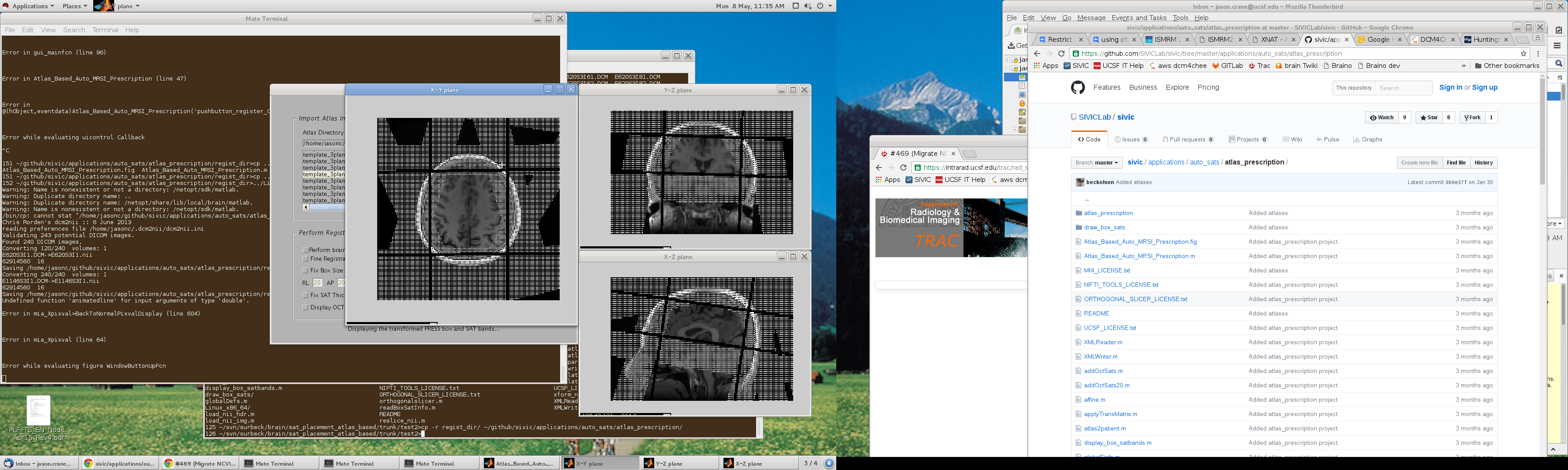
* Select an atlas prescription from the left “Atlas Directory” browser and click “Add”

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* Click on Register to align the atlas prescription to the patient’s T1.

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* The patient aligned prescription will be displayed in 3 pop-up windows:

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* Output Files:
  + Intermediate processing files are written to a temporary directory:
    - /export/home/sdc/svk/console/data/SCANNER\_NAME/
  + Final results are written to /usr/g/research/mrs/
    - transMatrix.dat
    - box\_satbands\_atlasbased.dat
    - sat\_bands.dat
    - press\_box.dat

1. **References and Resources:**

Bian, W., Li, Y., Crane, J. C. and Nelson, S. J. (2017), Fully automated atlas-based method for prescribing 3D PRESS MR spectroscopic imaging: Toward robust and reproducible metabolite measurements in human brain. Magn. Reson. Med. doi:10.1002/mrm.26718

Source: <https://github.com/SIVICLab/sivic/tree/master/applications/auto_sats/atlas_prescription>

Sample Prescriptions: <https://github.com/SIVICLab/sivic/tree/master/applications/auto_sats/atlas_prescription/atlas_prescription>