

National Aeronautics and Space Administration



# Fermi

Gamma-ray Space Telescope

[www.nasa.gov/fermi](http://www.nasa.gov/fermi)



## How to keep analyzing Fermi data after the workshop?

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## You have 2 options ...



- **Install all of the software yourself**
  - **SSW/OSPEX**
  - **RMFIT**
  - **LAT Science Tools**
  - **XSPEC**
  - **Nicola's Scripts**
  - **Lots of sub-packages (gfortran, gsl, python, scipy, numpy, etc.)**
- **Keep using the Virtual Machine**
  - **IDL license expires Aug 31, 2012**
  - **You can use your own license**
  - **If you pay for VMWare or Virtualbox, there are nice added features like cut and paste, easily moving files, etc.**
- **Either way, you have to keep the software updated yourself**
  - **Science tools ~1-2 times per year (signup for fermisoft email list to get notified)**
  - **SSW update**

# Install the software yourself



- [http://fermi.gsfc.nasa.gov/science/mtgs/workshops/da2012\\_solar/instructions.html](http://fermi.gsfc.nasa.gov/science/mtgs/workshops/da2012_solar/instructions.html)

## Fermi Solar Data Analysis Workshop Software Installation Instructions

The workshop will include sessions on analysis of GBM (day 1) and LAT (day 2) data, including the LAT Low Energy (LLE) event selection. Analysis of GBM data will be presented in both the SSW/OSPEX and RMFIT frameworks. Analysis of LAT data will be presented using the LAT Science Tools, with joint fitting of the GBM and LLE data in XSPEC.

Virtual machine: We have prepared a Scientific Linux virtual machine installation which is a self-contained operating system with pre-installed IDL, SSW/OSPEX, RMFIT, HEASOFT, and the Science Tools. The IDL installation includes a temporary license good through Aug 31, 2012. The users must first install a virtual machine environment such as VirtualBox or VMware, and then the user will load the prepared ISO file which contains the virtual operating system. The virtual machine is intended for use specifically at this workshop. Although Windows and Linux users can select either VirtualBox or VMware, we recommend VMware as it is easier to set up and extend. Mac users must select the VirtualBox installation. There will likely be additional software updates to download closer to the workshop.

- [Installing VMWare \(Windows, Linux\)](#)
- [Installing VirtualBox \(Windows, Mac, Linux\)](#)
- [Virtual machine downloads](#)

For longer-term data analysis uses, the user may want to install some or all components on their native operating system as appropriate (see platform-dependent information below).

### **Self-Installation (non-virtual machine instructions - not recommended for workshop):**

- [SSW/OSPEX](#)
- [LAT Science Tools](#): Follow the instructions from the FSSC
- [RMFIT](#): The version included in the VM is a release candidate, and is therefore not supported by the GBM team beyond the VM setup. A new official version will be released via the FSSC soon, but it may not be prior to the workshop.
- [HEASOFT](#): Select your operating system to download a binary and the packages "General use-FTOOLS" and "XANADU"
- [Python LAT Scripts](#)

### **Windows Users:**

The Fermi Science Tools and RMFIT will only run on Linux or Mac operating systems. Therefore, you must install the virtual machine to run these tools. For the workshop, we strongly recommend use of the virtual machine.

### **Self-Installation:**

- SSW/OSPEX - instructions above

### **Mac Users:**



- **SSW/OSPEX**
  - Needs IDL
  - Can run on any platform (Windows, Mac, Linux)
- **RMFIT**
  - Needs IDL and fortran
  - Only runs on Mac, Linux
  - There is a version that does not need an IDL license, it uses an IDL virtual machine (not to be confused with our FermiVM)
  - There is a version (ver33pr7) on user contributed site:
    - <http://fermi.gsfc.nasa.gov/ssc/data/analysis/user/>
    - The version on VM is ver41rc4 (unreleased version)
  - New version to be released by GBM team in coming weeks



- **LAT Analysis**
  - **Science Tools – only on Mac/Linux**
  - **Nicola's Python Scripts – available on workshop FTP site**
- **XSPEC (for joint fitting)**
  - **Part of HEASARC FTOOLS**
  - **Only works on Mac/Linux**

## Replacing your IDL license on the VM



- If you already have an IDL license on your laptop and it is for IDL v8.1 or higher
  - **sftp or scp that file to your VM**
- **From within the VM**  
**scp myname@mymachine.nasa.gov:/usr/local/itt/license/license.dat /user/local/itt/license/**
- **Then your IDL should just work with your machine license**
- If you use a floating license (like we do at GSFC)
  - **Edit the .tcshrc file on the VM**
  - **Add the following line (e.g. for astrophysics division)**  
**setenv IDL\_LMGRD\_LICENSE\_FILE 1700@milkyway.gsfc.nasa.gov**



## Thanks for attending



- **Coming Soon ... FSSC Analysis Threads on Solar Flares**
  - **Based on this workshop**
  - **<http://fermi.gsfc.nasa.gov/ssc/data/analysis/scitools/>**
- **Questions after workshop**
  - **SSW/OSPEX**
    - **Kim Tolbert ([anne.k.tolbert@nasa.gov](mailto:anne.k.tolbert@nasa.gov))**
    - **Richard Schwartz ([richard.schwartz@nasa.gov](mailto:richard.schwartz@nasa.gov))**
  - **RMFIT**
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  - **Science Tools**
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