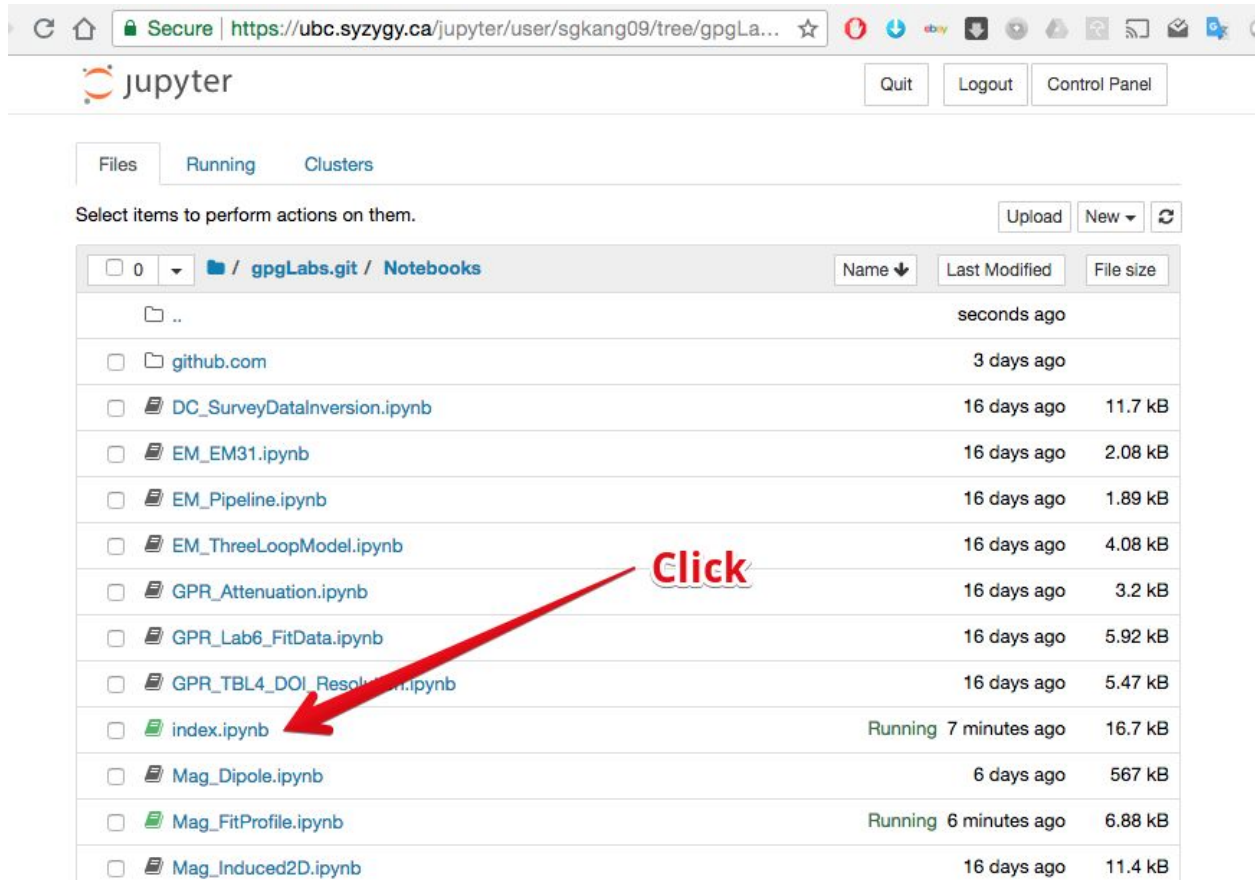


Step1: Click this [link](#)

Then it will ask you to log in, so type in your cwl id and password to log in. If you successfully logged-in then you will see below page



The screenshot shows a web browser window with the URL <https://ubc.syzygy.ca/jupyter/user/sgkang09/tree/gpgLa...>. The JupyterLab interface is displayed, showing a file browser view. The breadcrumb path is `/ gpgLabs.git / Notebooks`. A table of files is shown with columns for Name, Last Modified, and File size. The file `index.ipynb` is highlighted, and a red arrow points to it with the word "Click" in red text.

	Name	Last Modified	File size
<input type="checkbox"/>	..	seconds ago	
<input type="checkbox"/>	github.com	3 days ago	
<input type="checkbox"/>	DC_SurveyDataInversion.ipynb	16 days ago	11.7 kB
<input type="checkbox"/>	EM_EM31.ipynb	16 days ago	2.08 kB
<input type="checkbox"/>	EM_Pipeline.ipynb	16 days ago	1.89 kB
<input type="checkbox"/>	EM_ThreeLoopModel.ipynb	16 days ago	4.08 kB
<input type="checkbox"/>	GPR_Attenuation.ipynb	16 days ago	3.2 kB
<input type="checkbox"/>	GPR_Lab6_FitData.ipynb	16 days ago	5.92 kB
<input type="checkbox"/>	GPR_TBL4_DOI_Resolution.ipynb	16 days ago	5.47 kB
<input type="checkbox"/>	index.ipynb	Running 7 minutes ago	16.7 kB
<input type="checkbox"/>	Mag_Dipole.ipynb	6 days ago	567 kB
<input type="checkbox"/>	Mag_FitProfile.ipynb	Running 6 minutes ago	6.88 kB
<input type="checkbox"/>	Mag_Induced2D.ipynb	16 days ago	11.4 kB

Step2: Click index.ipynb

This will show you below image



## GPG Labs

This collection of notebooks covers basic principles of applied geophysics. Associated material can be found in the [GPG: Geophysics for Practicing Geoscientists](#).

If you have feedback, we would like to hear from you!

- [Contact us](#)
- [Report issues](#)
- [Join the development](#)



## Contents

### Magnetics

- [MagneticDipoleApplet.ipynb](#) - Magnetic dipole applet
- [MagneticPrismApplet.ipynb](#) - Magnetic prism applet
- [Mag\\_Induced2D.ipynb](#) - Induced magnetic anomaly demo
- [Mag\\_FitProfile.ipynb](#) - Fit one magnetic profile from field observation

### Seismic

- [SeismicRefractionApp.ipynb](#) - Seismic Refraction Applet
- [Seis\\_Refraction.ipynb](#) - Seismic refraction survey demo
- [Seis\\_Reflection.ipynb](#) - Synthetic reflection seismogram
- [Seis\\_NMO.ipynb](#) - Normal moveout demo
- [Seis\\_VerticalResolution.ipynb](#) - Vertical resolution in reflection

### Ground Penetrating Radar

- [GPR\\_Attenuation.ipynb](#) - EM attenuation in GPR
- [GPR\\_FitData.ipynb](#) - Fit field data

## Step3: Install packages

Now go to the bottom of the page then you will see



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```
In [1]: # !pip install git+https://github.com/geoscixyz/gpgLabs.git@master
```

**Click**



Click the cell and remove “#” in the cell, which will result in



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```
In [1]: !pip install git+https://github.com/geoscixyz/gpgLabs.git@master
```

You are almost done! Now click “Run All”, which will install all required packages

The screenshot shows the JupyterLab interface. At the top, there's a header with the Jupyter logo, the word 'index', and a timestamp 'Last Checkpoint: Last Tuesday at 11:03 PM (autosaved)'. To the right are 'Logout' and 'Control Panel' buttons. Below the header is a menu bar with 'File', 'Edit', 'View', 'Insert', 'Cell', 'Kernel', 'Widgets', and 'Help'. The 'Cell' menu is open, showing options: 'Run Cells', 'Run Cells and Select Below', 'Run Cells and Insert Below', 'Run All', 'Run All Above', 'Run All Below', 'Cell Type', 'Current Outputs', and 'All Output'. A red arrow points to the 'Run All' option, with the word 'click' written in red next to it. The main content area shows a page titled 'GPG Lab' with a description of geophysics and a list of links: 'Contact us', 'Report issue', and 'Join the development'. There's also a 'Contents' section with 'Magnetism' listed.

\*Note: You must run all three steps every time you are logging into Sygzy!

## Step4: Explore Apps

Now you are all set to explore apps. For instance, click “MagneticDipoleApplet.ipynb”

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### Magnetics

- [MagneticDipoleApplet.ipynb](#) - Magnetic dipole applet
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- [Mag\\_FitProfile.ipynb](#) - Fit one magnetic profile from field observation

click

Then click "Run All" under the Cell tab

jupyter MagneticDipoleApplet Last Checkpoint: 2018-09-05 (unsaved changes) Logout Control Panel

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3

Run Cells  
Run Cells and Select Below  
Run Cells and Insert Below  
Run All  
Run All Above  
Run All Below  
Cell Type  
Current Outputs  
All Output

click

This is the [Jupyter](#) code, you will only need to run the code and computation environment. For this lab, you do not have to write any code.

To use the notebook, you can:

- "Shift + Enter" to run the current cell and insert a new one below it.
- You can alter the cell type (Code, Markdown, Raw Notebook) by clicking on the cell type dropdown menu.
- If you want to run all cells, click on "Run All" (if you do not see this option, click on the forward arrow button near the top of the document).

In [4]: `from gpgLabs.Mag.MagDipoleApp import MagneticDipoleApp`

## Magnetic Dipole Applet

### Purpose

The objective is to learn about the magnetic field observed at the ground's surface, caused by a small buried dipolar magnet. In geophysics, this simulates the observed anomaly over a buried susceptible sphere that is magnetized by the Earth's magnetic field.

Finally, you are ready to explore app!

```
In [2]: mag = MagneticDipoleApp()  
mag.interact_plot_model_dipole()
```

