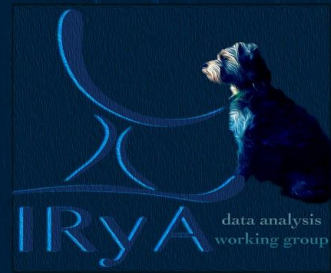


# Welcome to the DAWGI Guest Lectures 2021!

Session 3: Friday, 29<sup>th</sup> January, 14:30 - 16:00

Instructions for before and during the lecture

# Before lecture: set up Colab session

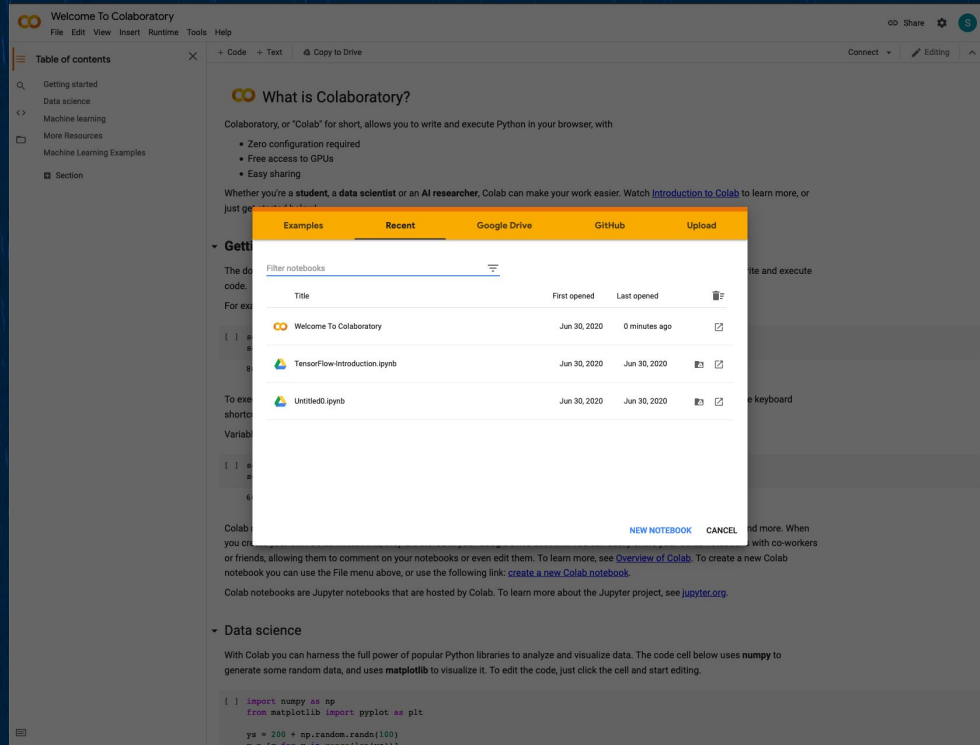


The code for the problem-solving session takes a long time to finish execution.

To ensure that the results are ready for the problem-solving session, the code must be executed before the lecture begins.

The following slides explain how to do this.

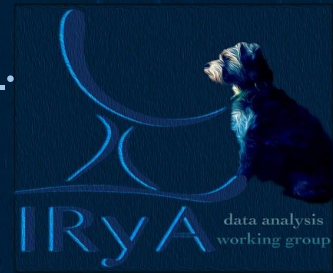
Navigate to [colab.research.google.com](https://colab.research.google.com) and sign in with your Google account. A menu will pop up:



(If you don't see it, click on File → Upload Notebook)



Select the “Github” tab and search for user sundarjhu.












Examples   Recent   Google Drive   **Github**   Upload

Enter a GitHub URL or search by organization or user ☐ Include private repos

sundarjhu

Repository: ☐ sundarjhu/DAWGI\_Lectures\_2021 Branch: ☐ main

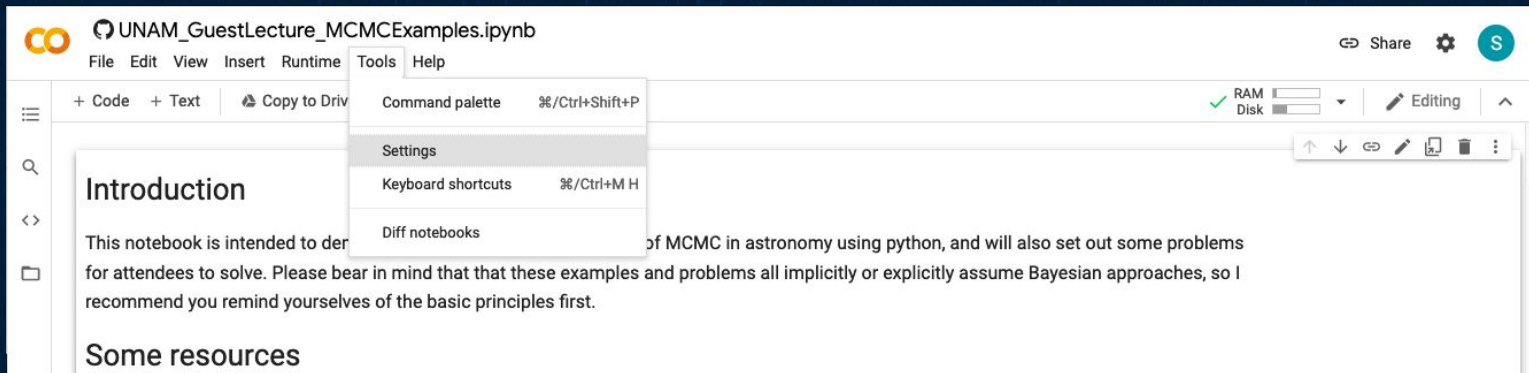
Path

 <a href="#">Demo_DAWGI_HBM.ipynb</a> <input type="button" value="Open notebook"/>		
 UNAM_GuestLecture_MCMCExamples.ipynb		
 UNAM_GuestLecture_ModelSelectionExamples.ipynb		

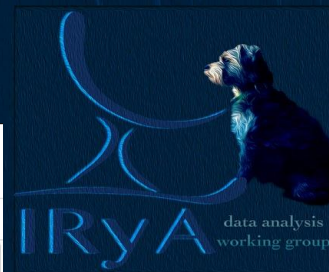
[NEW NOTEBOOK](#) [CANCEL](#)

From the results, select the file  
Demo\_DAWGI\_HBM.ipynb

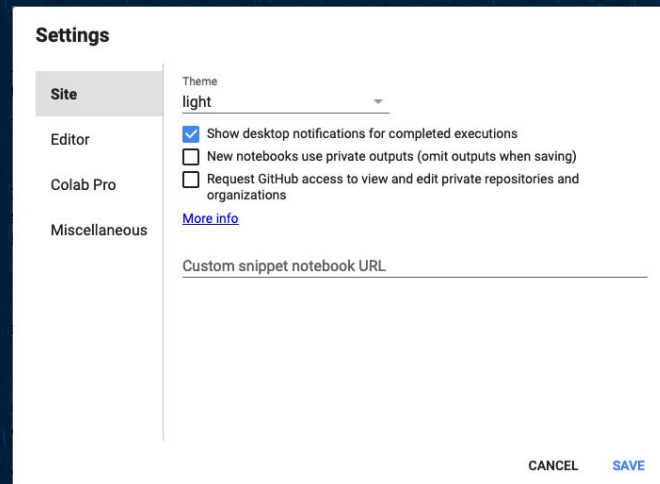
# Click on Tools → Settings



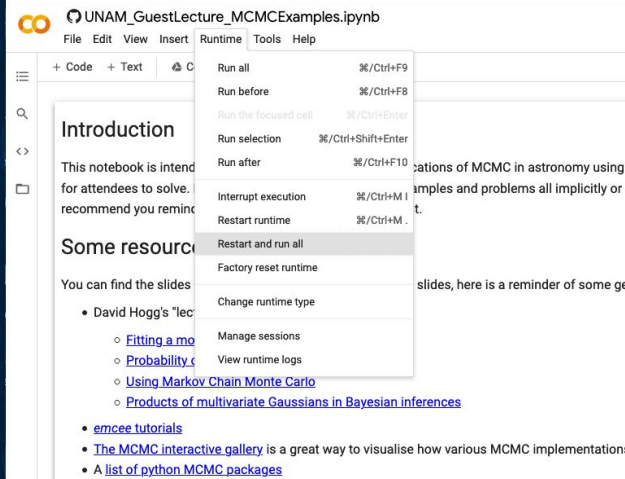
The screenshot shows the JupyterLab interface for a notebook titled "UNAM\_GuestLecture\_MCMCExamples.ipynb". The "Tools" menu is open, displaying options: "Command palette" (⌘/Ctrl+Shift+P), "Settings" (highlighted), "Keyboard shortcuts" (⌘/Ctrl+M H), and "Diff notebooks". The notebook content includes a section titled "Introduction" with the text: "This notebook is intended to der... of MCMC in astronomy using python, and will also set out some problems for attendees to solve. Please bear in mind that that these examples and problems all implicitly or explicitly assume Bayesian approaches, so I recommend you remind yourselves of the basic principles first." Below this is a section titled "Some resources".



In the Site tab, check the box next to “Show desktop notifications for completed executions” and click “SAVE”.



The screenshot shows the "Settings" dialog box with the "Site" tab selected. The "Theme" is set to "light". Under the "Editor" section, the checkbox "Show desktop notifications for completed executions" is checked. Under the "Colab Pro" section, the checkboxes "New notebooks use private outputs (omit outputs when saving)" and "Request GitHub access to view and edit private repositories and organizations" are unchecked. A "More info" link is present. Under the "Miscellaneous" section, there is a text input field for "Custom snippet notebook URL". At the bottom right, there are "CANCEL" and "SAVE" buttons.



UNAM\_GuestLecture\_MCMCExamples.ipynb

File Edit View Insert Runtime Tools Help

+ Code + Text

Introduction

This notebook is intended for attendees to solve. I recommend you reminding yourselves of MCMC in astronomy using examples and problems all implicitly or explicitly.

Some resources

You can find the slides here, here is a reminder of some general slides, here is a reminder of some general slides.

- David Hogg's "lecture notes" on MCMC
  - [Fitting a model](#)
  - [Probability](#)
  - [Using Markov Chain Monte Carlo](#)
  - [Products of multivariate Gaussians in Bayesian inferences](#)
- [emcee tutorials](#)
- [The MCMC interactive gallery](#) is a great way to visualise how various MCMC implementations work.
- [A list of python MCMC packages](#)

Click on  
Runtime → Restart and run all



Click “YES”

Restart runtime and run all cells in notebook

Are you sure you want to restart the runtime? Runtime state including all local variables will be lost.

CANCEL

YES

Warning: This notebook was not authored by Google.

This notebook is being loaded from [GitHub](#). It may request access to your data stored with Google, or read data and credentials from other sessions. Please review the source code before executing this notebook.

CANCEL

RUN ANYWAY

Click “RUN ANYWAY”

All set! Colab will notify you when execution is completed (~40 min).



# During lecture: PDF of presentation and Q&A



A PDF of the presentation is available [here](#) if you'd like to follow along on your local machine.

Please use the “Q&A” option, accessible from the bottom of the Zoom window, to ask questions of the speaker. You can also vote on questions asked by others. The speaker will address the questions when possible.