

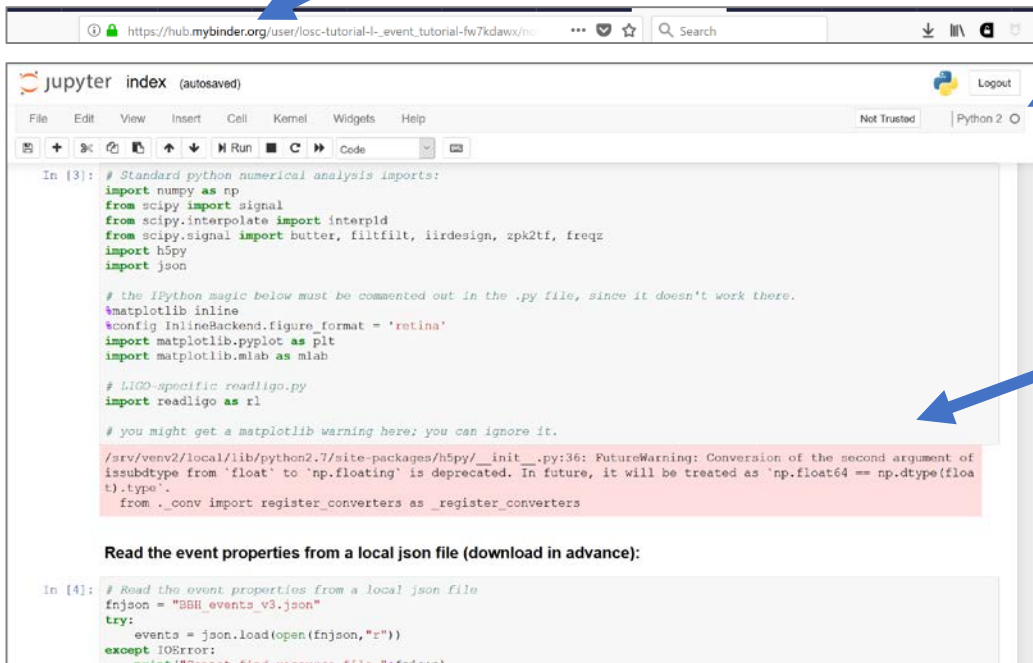
How does Binder work?

“**Binder** allows you to create custom computing environments that can be shared and used by many remote users”

<https://mybinder.readthedocs.io/en/latest/>

Visible in your browser,
but running on a remote machine

Your browser



```
In [3]: # Standard python numerical analysis imports:
import numpy as np
from scipy import signal
from scipy.interpolate import interp1d
from scipy.signal import butter, filtfilt, iirdesign, zpk2tf, freqz
import h5py
import json

# the IPython magic below must be commented out in the .py file, since it doesn't work there.
%matplotlib inline
%config InlineBackend.figure_format = 'retina'
import matplotlib.pyplot as plt
import matplotlib.mlab as mlab

# LIGO-specific readligo.py
import readligo as rl

# you might get a matplotlib warning here; you can ignore it.

/srv/venv2/local/lib/python2.7/site-packages/h5py/__init__.py:36: FutureWarning: Conversion of the second argument of
issubdtype from 'float' to 'np.floating' is deprecated. In future, it will be treated as 'np.float64 == np.dtype(floa
t).type'.
from ._conv import register_converters as _register_converters

Read the event properties from a local json file (download in advance):

In [4]: # Read the event properties from a local json file
fnjson = "BBH_events_v3.json"
try:
    events = json.load(open(fnjson, "r"))
except IOError:
    print("Cannot find resource file: " + fnjson)
```

Specified version
of Python
(or other kernels eg R)

You see the code in
the .ipynb file

How does Binder work?

Code for notebook and list of dependencies and files available on GitHub (right now Binder only works with public repositories)



+

Your browser

The image shows a Jupyter Notebook interface in a web browser. The browser's address bar displays the URL: `https://hub.mybinder.org/user/osc-tutorial-l-event_tutorial-fw7kdawx/nc`. The Jupyter Notebook interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help) and a toolbar with icons for file operations, running code, and viewing output. The notebook contains two code cells. The first cell, labeled 'In [3]:', contains Python code for importing libraries and reading event properties from a local JSON file. The second cell, labeled 'In [4]:', contains Python code for reading the event properties from a local JSON file. The output of the first cell shows a FutureWarning about the conversion of the second argument of `issubdtype` from 'float' to 'np.float64'.

```
In [3]: # Standard python numerical analysis imports:
import numpy as np
from scipy import signal
from scipy.interpolate import interp1d
from scipy.signal import butter, filtfilt, iirdesign, zpk2tf, freqz
import h5py
import json

# the ifPython magic below must be commented out in the .py file, since it doesn't work there.
%matplotlib inline
%config InlineBackend.figure_format = 'retina'
import matplotlib.pyplot as plt
import matplotlib.mlab as mlab

# LIGO-specific readligo.py
import readligo as rl

# you might get a matplotlib warning here; you can ignore it.

/srv/venv2/local/lib/python2.7/site-packages/h5py/_init_.py:36: FutureWarning: Conversion of the second argument of
issubdtype from 'float' to 'np.float64' is deprecated. In future, it will be treated as 'np.float64 == np.dtype(floa
t).type'.
  from ._conv import register_converters as _register_converters

Read the event properties from a local json file (download in advance):

In [4]: # Read the event properties from a local json file
fnjson = "BBH_events_v3.json"
try:
    events = json.load(open(fnjson, "r"))
except IOError:
    print("Cannot find resource file: " + fnjson)
```

How does Binder work?



builds Docker image based on repo and generates URL for public access

Code and dependencies in repo

+

+

Your browser

```
In [3]: # Standard python numerical analysis imports:
import numpy as np
from scipy import signal
from scipy.interpolate import interp1d
from scipy.signal import butter, filtfilt, iirdesign, zpk2tf, freqz
import h5py
import json

# the IPython magic below must be commented out in the .py file, since it doesn't work there.
%matplotlib inline
%config InlineBackend.figure_format = 'retina'
import matplotlib.pyplot as plt
import matplotlib.mlab as mlab

# LIGO-specific readligo.py
import readligo as rl

# you might get a matplotlib warning here; you can ignore it.

/srv/venv2/local/lib/python2.7/site-packages/h5py/_init_.py:36: FutureWarning: Conversion of the second argument of
issubdtype from 'float' to 'np.float64' is deprecated. In future, it will be treated as 'np.float64 == np.dtype(float)
.type'.
from ._conv import register_converters as _register_converters

Read the event properties from a local json file (download in advance):

In [4]: # Read the event properties from a local json file
fnjson = "BBH_events_v3.json"
try:
    events = json.load(open(fnjson, "r"))
except IOError:
    print("Cannot find resource file: " + fnjson)
```



required
software
+
packages

included
data

How does Binder work?

+

Cloud hosting + management

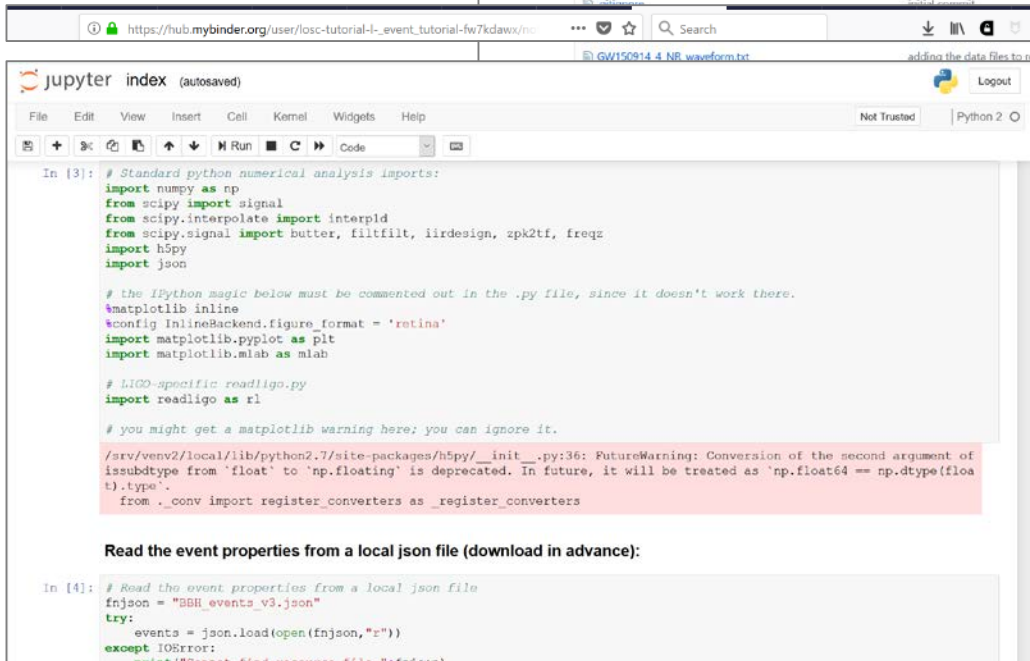
Docker image

+

Code and dependencies in repo

+

Your browser



```
In [3]: # Standard python numerical analysis imports:
import numpy as np
from scipy import signal
from scipy.interpolate import interp1d
from scipy.signal import butter, filtfilt, iirdesign, zp2tf, freqz
import h5py
import json

# the ifPython magic below must be commented out in the .py file, since it doesn't work there.
%matplotlib inline
%config InlineBackend.figure_format = 'retina'
import matplotlib.pyplot as plt
import matplotlib.mlab as mlab

# LIGO-specific readligo.py
import readligo as rl

# you might get a matplotlib warning here; you can ignore it.

/srv/venv2/local/lib/python2.7/site-packages/h5py/_init_.py:36: FutureWarning: Conversion of the second argument of
issubdtype from 'float' to 'np.floating' is deprecated. In future, it will be treated as 'np.float64 == np.dtype(floa
t).type'.
from ._conv import register_converters as _register_converters

Read the event properties from a local json file (download in advance):

In [4]: # Read the event properties from a local json file
fnjson = "BBH_events_v3.json"
try:
    events = json.load(open(fnjson, "r"))
except IOError:
    print("Cannot find resource file: " + fnjson)
```



required
software
+
packages

included
data



JupyterHub

+



Kubernetes

Generated binders are hosted by a hub
that deploys, scales, and manages
compute resources
using [Kubernetes](#)

(can run on any cloud platform provider)
More details: [BinderHub](#)