

▼ ALS User Meeting 2022

This notebook describes methods to extract key information from microCT image stacks

- 3D interactive visualization
- Complete [documentation](#)

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```
%matplotlib inline
```

```
from skimage import io
```

▼ 1. Read a microct image

- from NERSC
- from Google drive

▼ Read from NERSC

- discard this portion if running in Colab

```
datapath = "/global/cfs/cdirs/als/users/yourname/yourdata/" #update these values
!ls -lt "$datapath"
```

▼ Read from Google drive

- discard this portion if running at NERSC

```
from google.colab import drive
drive.mount('/content/drive')
```

```
Mounted at /content/drive
```

```
datapath = "/content/drive/My Drive/Colab Notebooks/ALS User Meeting 2022 colab/data/"
!ls -lt "$datapath"
```

```
total 7842
-rw----- 1 root root 8025493 Aug 11 16:46 bead_pack.tif
drwx----- 2 root root    4096 Aug 11 16:35 concrete
```

```
image = io.imread(datapath+'bead_pack.tif')
```

2. Visualization of stack

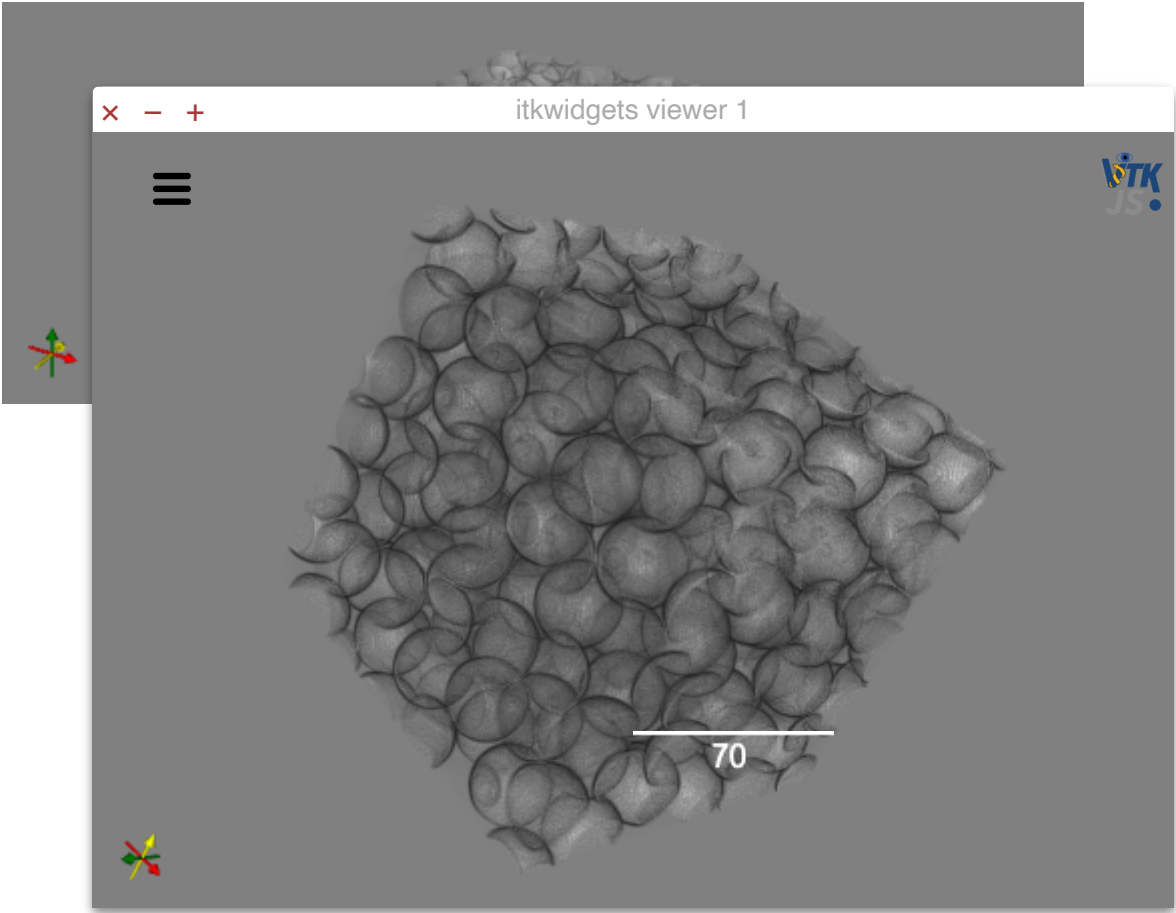
- 3D views with itkwidgets

```
!pip install 'itkwidgets>=1.0a6'
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/python-pkgs/
Collecting itkwidgets>=1.0a6
  Downloading itkwidgets-1.0a8-py3-none-any.whl (20 kB)
Collecting imjoy-rpc>=0.5.13
  Downloading imjoy_rpc-0.5.15-py3-none-any.whl (58 kB)
    |████████████████████| 58 kB 4.0 MB/s
Collecting itkwasm
  Downloading itkwasm-1.0b1-py3-none-any.whl (7.0 kB)
Collecting zarr
  Downloading zarr-2.12.0-py3-none-any.whl (185 kB)
    |██████████████████| 185 kB 19.2 MB/s
Collecting numcodecs
  Downloading numcodecs-0.10.2-cp37-cp37m-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (6.6 MB)
    |██████████████████| 6.6 MB 24.1 MB/s
Collecting imjoy-utils>=0.1.2
  Downloading imjoy_utils-0.1.2-py3-none-any.whl (5.3 kB)
Requirement already satisfied: msgpack>=1.0.2 in /usr/local/lib/python3.7/dist-packages (from imjoy-rpc==0.5.15)
Collecting websockets
  Downloading websockets-10.3-cp37-cp37m-manylinux_2_5_x86_64.manylinux1_x86_64.macosx10_9_arm64t802.macosx10_9_intel_m...
    |██████████████████| 112 kB 56.1 MB/s
Collecting shortuuid>=1.0.8
  Downloading shortuuid-1.0.9-py3-none-any.whl (9.4 kB)
Requirement already satisfied: numpy in /usr/local/lib/python3.7/dist-packages (from imjoy-rpc==0.5.15)
Requirement already satisfied: typing-extensions>=3.7.4 in /usr/local/lib/python3.7/dist-packages (from imjoy-rpc==0.5.15)
Requirement already satisfied: entrypoints in /usr/local/lib/python3.7/dist-packages (from imjoy-rpc==0.5.15)
Collecting asciitree
  Downloading asciitree-0.3.3.tar.gz (4.0 kB)
Collecting fasteners
  Downloading fasteners-0.17.3-py3-none-any.whl (18 kB)
Building wheels for collected packages: asciitree
  Building wheel for asciitree (setup.py) ... done
  Created wheel for asciitree: filename=asciitree-0.3.3-py3-none-any.whl size=5014 bytes sha256=8c1d1e1f1e1f1e1f1e1f1e1f1e1f1e1f1e1f1e1f1e1f1e1f1e1f1e1f1e1f1e1f
  Stored in directory: /root/.cache/pip/wheels/12/1c/38/0def51e15add93bff3f4bf9c1e1f1e1f1e1f1e1f1e1f1e1f1e1f
Successfully built asciitree
Installing collected packages: websockets, shortuuid, numcodecs, fasteners, asciitree
Successfully installed asciitree-0.3.3 fasteners-0.17.3 imjoy-rpc-0.5.15 imjoy-ui-v3.12.0
```

```
from itkwidgets import view
view(image, slicing planes=True)
```





<itkwidgets viewer Viewer at 0x7fc73bec2090>

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