Adding Sphinx documentation to github repo

Content

- This example uses package name `mypackage`, which should be replaced by the real package name.
- It seems like names `html, gh-pages` are static.

Create local release

As usually, nothing special:

```
cd <some-directory>
source /reg/g/psdm/bin/conda_setup
condarel --newrel --name con-doc # name is arbitrary
cd con-doc
source conda_setup
```

Add package/repository from github

Being on pslogin (now it also works on psana nodes):

```
git clone https://github.com/lcls-psana/mypackage.git
# or
condarel --addpkg --name mypackage --tag HEAD
```

Set up sphinx within main repository

Add Sphinx configuration files in the directory `web`. The name `web` is arbitrary but for the purpose of further automation it would be nice to respect it as static.

```
mkdir mypackage/doc/web
cd mypackage/doc/web
sphinx-quickstart
```

`Then in dialog with sphinx-quickstart type-in non-default answers for options as follows.`

```
> Project name: mypackage-doc
> Author name(s): Your Name and Titles Here
> Project version []: 1.1
> Project release [1.1]: 1
> autodoc: automatically insert docstrings from modules (y/n) [n]: y
> intersphinx: link between Sphinx documentation of different projects (y/n) [n]: y
> viewcode: include links to the source code of documented Python objects (y/n) [n]: y
> githubpages: create .nojekyll file to publish the document on GitHub pages (y/n) [n]: y
```

In principle now documentation can be generated. But we do not want to mix it with code and will add it to the separate branch with static name `gh-pages` doing tricks as follows.

Set up separate directory and repository for documentation

```
mkdir ../../../mypackage-doc # arbitrary, but the same path should be in the Makefile...
cd ../../../mypackage-doc
git clone https://github.com/lcls-psana/mypackage.git html
cd html
```

Create new branch, set link, clean-up

```
git branch gh-pages # this is a static name recognized by github...
git symbolic-ref HEAD refs/heads/gh-pages
rm .git/index
git clean -fdx # -A-A-A !!! this command deletes everything ... from the branch gh-pages, not master
git branch # just check that you are in * gh-pages
```

Change configuration files

Makefile

Need to change BUILDDIR in order to not spoil master branch

```
cd ../../mypackage/doc/web/
emacs Makefile
--------------
# BUILDDIR      = build
BUILDDIR      = ../../../mypackage-doc
```

index.rst

Add something like

```
:maxdepth: 3

.. automodule:: <your module name>
   :members:
   :show-inheritance:
   :special-members:
   :private-members:
.. autosummary::
   :toctree: _autosummary
```

conf.py

At least need to set path to the source files which docstrings are going to be used:

```
import os
import sys
sys.path.insert(0, os.path.abspath('../../src')) # ABSOLUTE PATH!!!

# for my personal preferences:
'sphinx.ext.autosummary'
autosummary_generate = True
# html_theme = 'alabaster'
html_theme = 'agogo'

#        'about.html',
#        'donate.html',

#add:
def setup(app):
    app.add_stylesheet('my_theme.css')
```

Add _static/my_theme.css containing

```
.wy-nav-content {
    max-width: 900px !important;
}
```

Commit changes to master

```
git add -A
dir status
git commit -m "add sphinx doc"
git push origin master
```

Generate documentation

assuming that we are in .../con-doc/mypackage/doc/web

```
cd .../mypackage
scons # I am not sure, but it probably needs to be done for cross-references...

cd doc/web
make html
```

Commit changes to gh-pages

```
cd ../../../mypackage-doc/html
git branch # make sure that it is * gh-pages
git status
git add -A
git commit -m "add/update doc"
git push origin gh-pages
```

Shortcut for commands above.

Setup package structure to generate documentation

- TBD - need in script which creates sphinx configuration files (equivalent to sphinx-quickstart) but with significantly extended Makefile.
- For now copy `psalgos/doc/web` directory to `mypackage/doc/web` and edit Makefile, fonf.py and index.rst files.

Generate documentation

After staging or committing code changes

```
cd doc/web
make newdoc
```

Change GitHub Pages settings

This step needs to done if mypackage already has associated Wiki pages. By default the link to documentation `https://lcls-psana.github.io/mypackage/` points to master repo documentation. This needs to be changed to gh-pages in Setting for mypackage repo.

On `https://github.com/lcls-psana/`mypackage.git click Settings, scroll down to section GitHub Pages, and set correct Source pointing to gh-pages branch, then save settings.

See documentation

https://lcls-psana.github.io/mypackage/

For example:

- https://lcls-psana.github.io/psalgos/
- https://lcls-psana.github.io/PSCalib/
- https://lcls-psana.github.io/Detector/

References

- http://lucasbardella.com/blog/2010/02/hosting-your-sphinx-docs-in-github
- https://daler.github.io/sphinxdoc-test/includeme.html
- https://help.github.com/articles/configuring-a-publishing-source-for-github-pages/
- https://thomas-cokelaer.info/tutorials/sphinx/rest_syntax.html