

Accessing OSIRIS and using OSIRIS through GitHub

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Why should we use a version control system

version control system

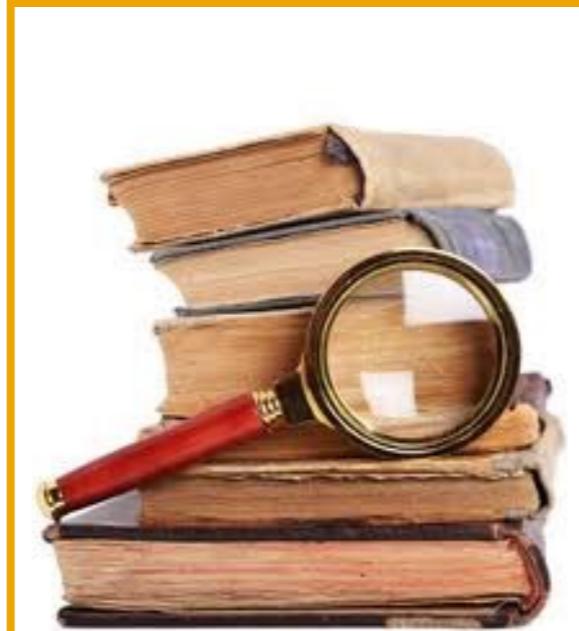
collaboration



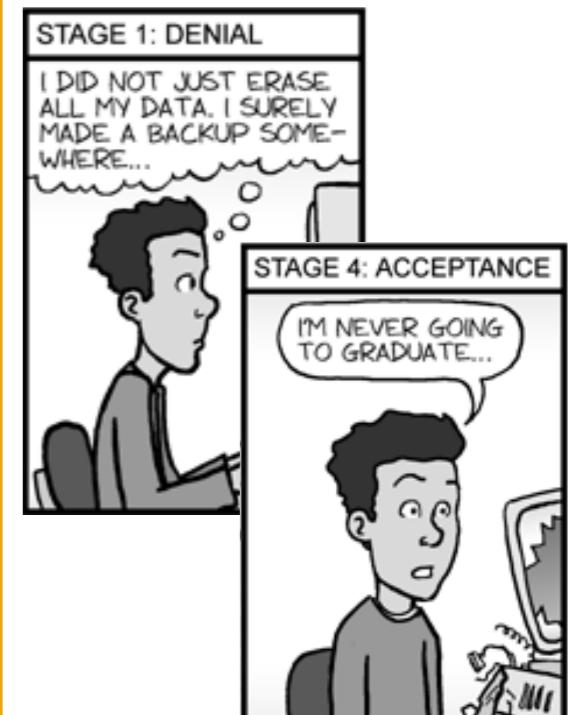
versioning



logging



backup



GitHub - social coding

Internet hosting service for git repositories

The screenshot shows a GitHub repository page for 'GoLP-IST / osiris'. The repository is private, has 174 commits, 4 branches, 2 releases, and 3 contributors. The top right corner shows social metrics: 9 watchers, 3 stars, and 4 forks. A yellow box highlights the 'social component' of the forks button. Another yellow box highlights the 'social component' of the contributor count. The commit history lists several recent changes, such as a merge pull request from 'ahelm/hotfix/pgc_underflow' and various fixes and merges.

Branch	Commit Message	Date
master	zambzamb committed on GitHub Merge pull request #18 from ahelm/hotfix/pgc_underflow	Latest commit 3bcee6f on Mar 10
codegen	Removes generation of logical array memory allocation	4 months ago
config	Merge branch 'feature/pgc_solver' of github.com:ahelm/osiris into gol...	3 months ago
decks/test	Fixed the initial cylindrical-modes stub integration code. I did not p...	11 months ago
jobscripts	Adds job submission script for the Marconi system	10 months ago
source	fix #17: underflow in pgc using double precision	2 months ago

access will be granted by us (private repository)

GitHub - social coding

Internet hosting service for git repositories

The screenshot shows a GitHub repository page for 'GoLP-IST / osiris'. The repository is private, has 9 stars, 3 forks, and 4 issues. The 'Issues' tab is selected, highlighted by a yellow box. A vertical line points from the 'Issues' tab in the navigation bar down to the 'issues' section on the left, which is also highlighted by a yellow box. The 'issues' section lists:

- ◆ bug reports
- ◆ code discussion
- ◆ feature request
- ◆ project discussions

Other repository statistics shown include 4 branches, 2 releases, and 3 contributors. A green 'Clone or download' button is visible.

Branch	Description	Time Ago
config	Merge branch 'feature/pgc_solver' of github.com:ahelm/osiris into gol...	3 months ago
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GitHub - social coding

Internet hosting service for git repositories

The screenshot shows a GitHub repository page for 'GoLP-IST / osiris'. The repository is private, has 9 issues, 0 pull requests, 0 projects, a wiki, pulse, and graphs. It has 2 releases, 3 contributors, and 174 commits. The pull requests section is highlighted with a yellow box. Inside this box, the word 'pull request' is bolded, followed by a bulleted list:

- ◆ code pushes
- ◆ bug fixes
- ◆ publishing features
- ◆ code discussion section

Below this box, there is a list of commits:

- zambzamb c Merge branch 'feature/pgc_solver' of github.com:ahelm/osiris into gol... 4 months ago
- codegen Fixed the initial cylindrical-modes stub integration code. I did not p... 11 months ago
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access will be granted by us (private repository)

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Internet hosting service for git repositories

The screenshot shows a GitHub repository page for 'GoLP-IST / osiris'. The repository is private, indicated by a lock icon. It has 174 commits, 4 branches, 2 releases, and 3 contributors. A yellow box highlights the 'Fork' button in the top right corner, with a callout text 'private repo/copy' pointing to it. The commit history is listed below, showing recent changes by 'zambzamb'.

Commit	Description	Date
zambzamb committed on GitHub	Merge pull request #18 from ahelm/hotfix/pgc_underflow	Latest commit 3bcee6f on Mar 10
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GitHub - social coding

Internet hosting service for git repositories

The screenshot shows a GitHub repository page for 'GoLP-IST / osiris'. The repository is private, has 174 commits, 4 branches, and 2 releases. It has 3 contributors. A yellow box highlights the '2 releases' button. A yellow arrow points from this button to a box labeled 'OSIRIS release info'. Below the releases section, there is a list of recent commits:

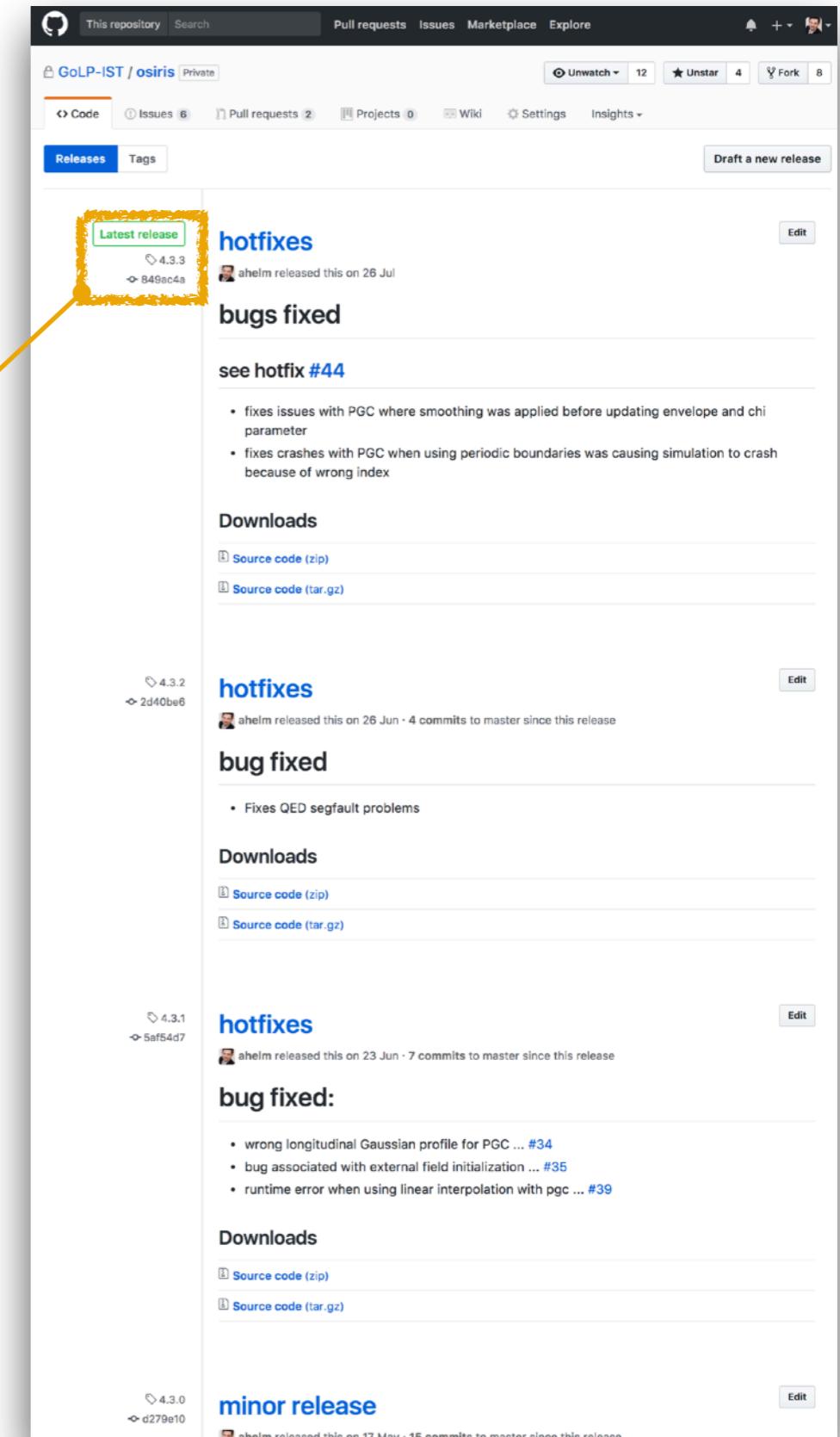
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OSIRIS versioning and changelog

versioning numbering of OSIRIS A.B.C:

- ◆ sequence-based software versioning scheme
- ◆ A ... main version of OSIRIS (major rework)
- ◆ B ... minor changes (features and extensions)
- ◆ C ... hot fixes (bugs at runtime/compile time)
- ◆ each release matches to a tag on master branch



The screenshot shows the GitHub repository page for 'GoLP-IST / osiris'. It displays four releases:

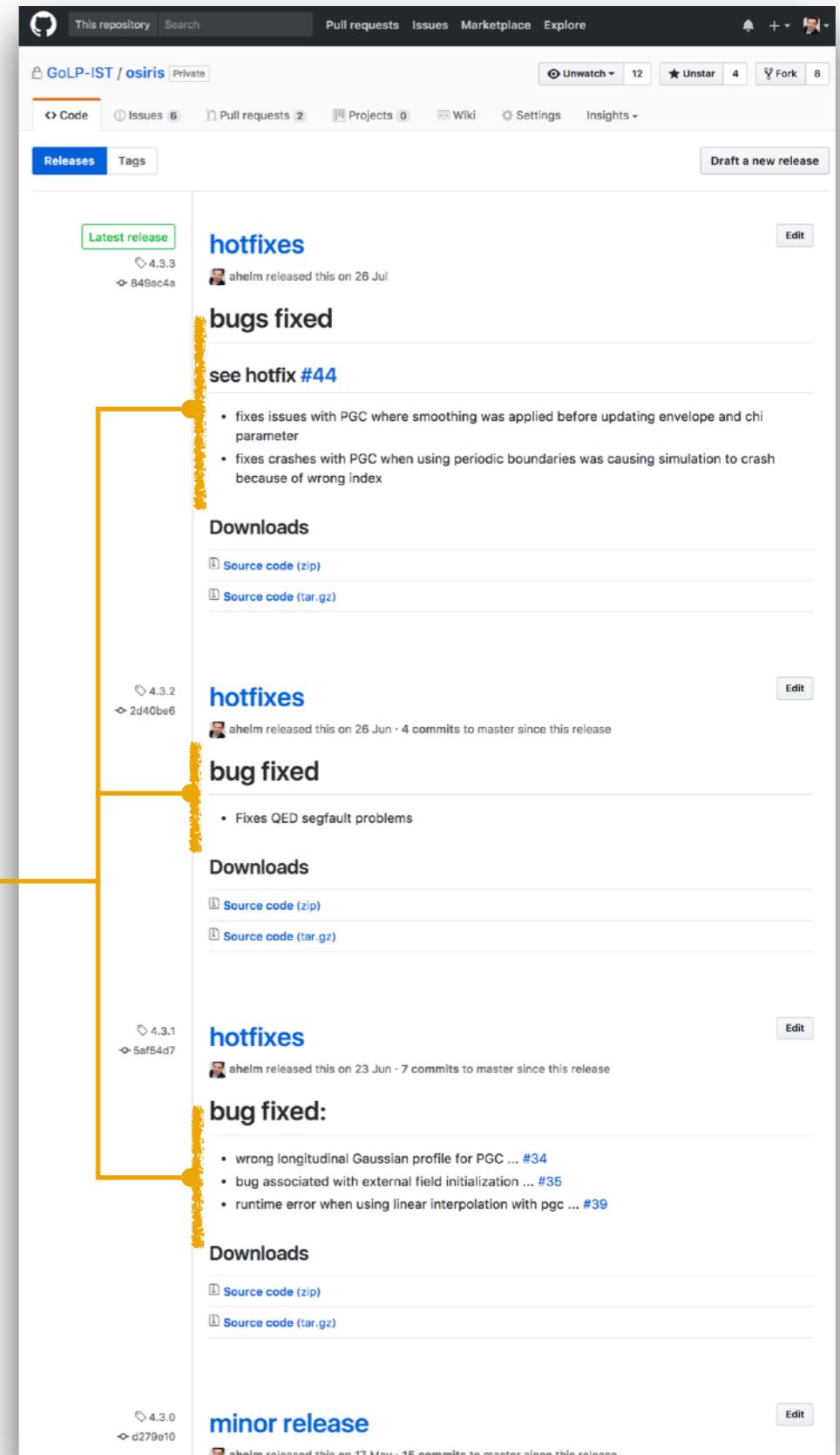
- Latest release:** 4.3.3 (tag 849ac4a)
 - hotfixes:** Fixes issues with PGC where smoothing was applied before updating envelope and chi parameter; fixes crashes with PGC when using periodic boundaries was causing simulation to crash because of wrong index.
 - Downloads:** Source code (zip), Source code (tar.gz)
- 4.3.2 (tag 2d40be6)**
 - hotfixes:** Fixes QED segfault problems.
 - Downloads:** Source code (zip), Source code (tar.gz)
- 4.3.1 (tag 5af54d7)**
 - hotfixes:** Fixes wrong longitudinal Gaussian profile for PGC ... #34, bug associated with external field initialization ... #35, runtime error when using linear interpolation with pgc ... #39.
 - bug fixed:** Fixes QED segfault problems.
 - Downloads:** Source code (zip), Source code (tar.gz)
- 4.3.0 (tag d279e10)**
 - minor release:** Includes 15 commits since the previous release.
 - Downloads:** Source code (zip), Source code (tar.gz)

OSIRIS versioning and changelog

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- ◆ **each release matches to a tag on master branch**

- ◆ changelog for each new release
- ◆ references to pull request and issues



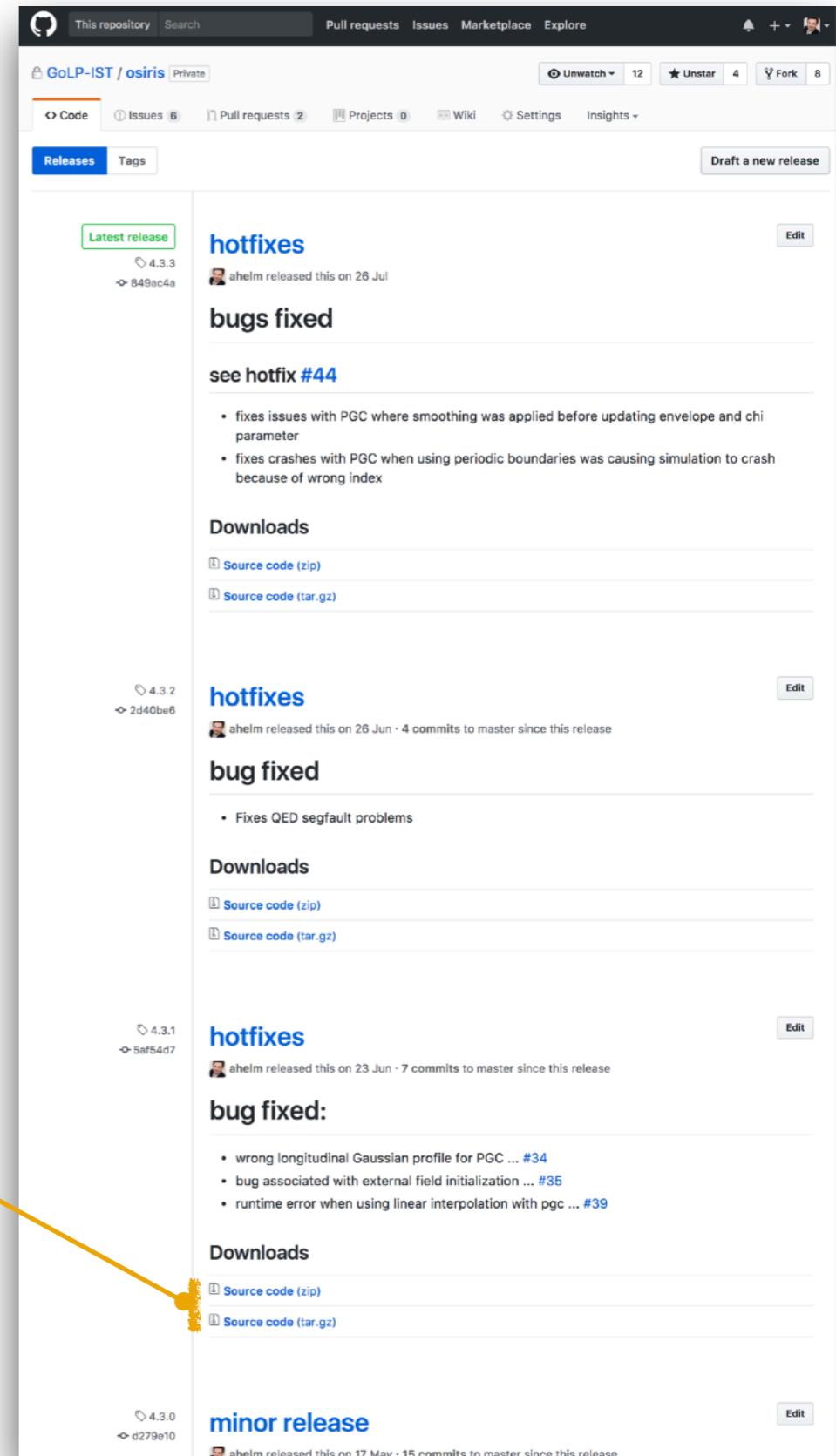
OSIRIS versioning and changelog

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- ◆ changelog for each new release
- ◆ references to pull request and issues

- ◆ Download source code of OSIRIS
- ◆ **recommended way: use git to obtain OSIRIS**



The screenshot shows the GitHub repository page for `GolP-IST / osiris`. It displays four releases of OSIRIS:

- Latest release:** 4.3.3 (released on 26 Jul by ahelm) - **hotfixes:** Fixes issues with PGC where smoothing was applied before updating envelope and chi parameter; Fixes crashes with PGC when using periodic boundaries was causing simulation to crash because of wrong index.
- 4.3.2 (released on 26 Jun by ahelm):** **hotfixes:** Fixes QED segfault problems.
- 4.3.1 (released on 23 Jun by ahelm):** **hotfixes:** Fixes wrong longitudinal Gaussian profile for PGC ... #34; bug associated with external field initialization ... #35; runtime error when using linear interpolation with pgc ... #39.
- 4.3.0 (released on 17 May by ahelm):** **minor release**

Branching model for OSIRIS

master branch for using OSIRIS and development branch for extending

master branch

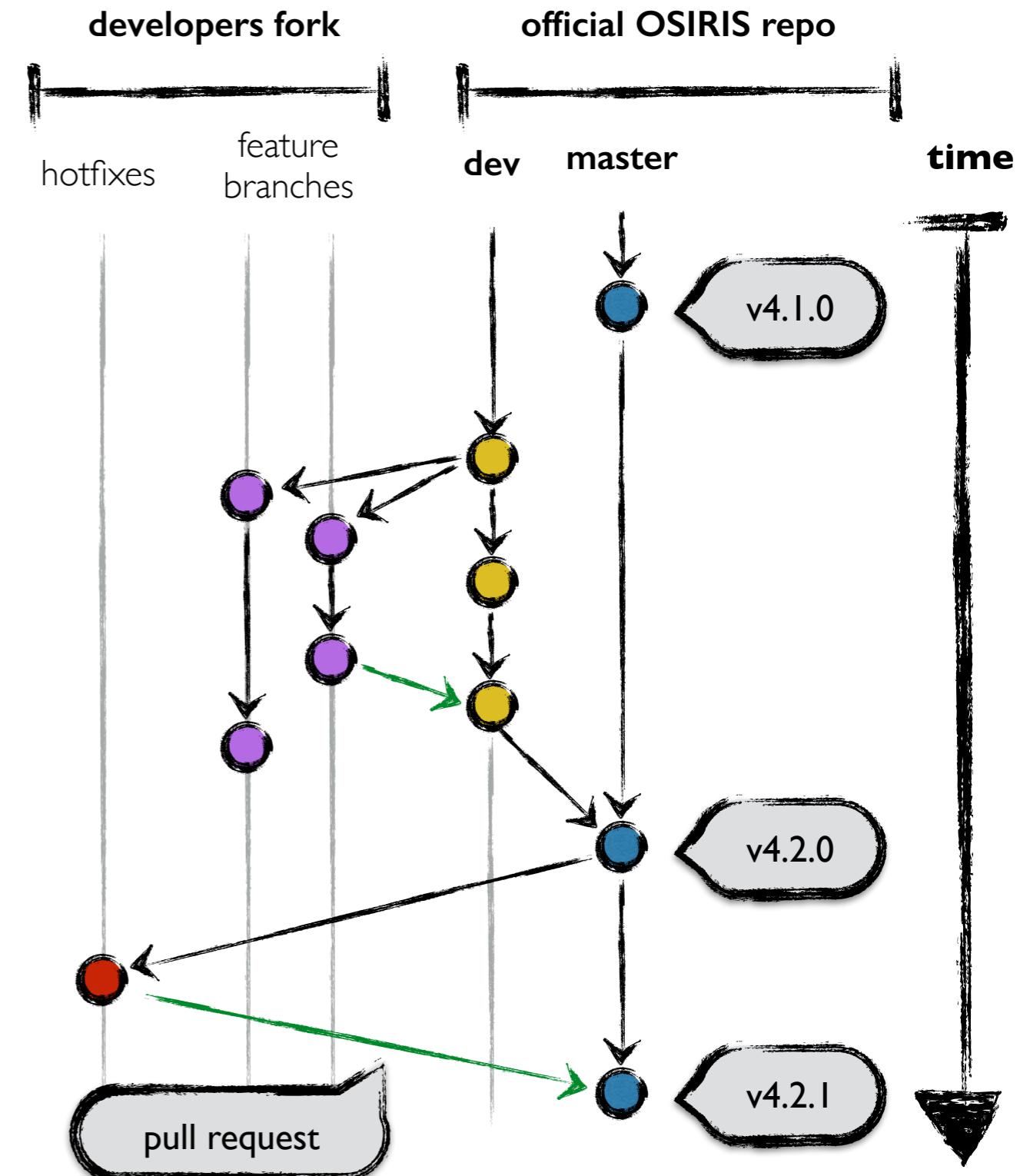
- ◆ stable version with supported features
- ◆ for simulation and for using OSIRIS
- ◆ tags for different versions

dev branch

- ◆ newest features and current development
- ◆ mirror of master but ahead in commits
- ◆ can be unstable to perform simulations

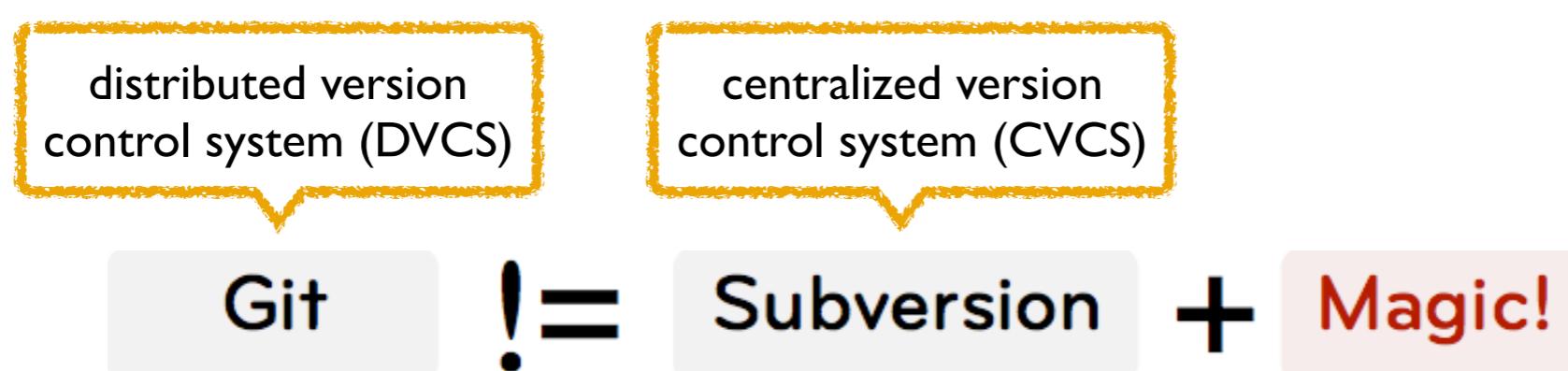
extension and hotfixes

- ◆ adding changes to OSIRIS through pull request
- ◆ pull requests for **features** - base is dev
- ◆ pull requests for **hotfixes** - base is master



What is git

git is not subversion on steroids



In many ways you can just see git as a filesystem — it's content-addressable, and it has a notion of versioning, but I really really designed it coming at the problem from the viewpoint of a filesystem person (hey, kernels is what I do), and I actually have absolutely zero interest in creating a traditional SCM system.

Linus Torvalds

Installing and setting up git



The entire [Pro Git book](#) written by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

obtaining git:

<https://git-scm.com/downloads>

make sure git uses your name/email:

```
$ git config --global user.name
Anton Helm
```

```
$ git config --global user.email
anton.helm@tecnico.ulisboa.pt
```

otherwise setup git to use your name/email:

```
$ git config --global user.name "Your Name"
$ git config --global user.email "your_email@somewhere.com"
```

OSIRIS from a user perspective

getting OSIRIS and keep it updated

clone the OSIRIS repository (GitHub credentials required):

```
$ git clone https://github.com/GoLP-IST/osiris.git
```

enter the “osiris” directory and check that you are on master

```
$ cd osiris && git branch  
* master
```

show remotes

```
$ git remote -v  
origin  https://github.com/GoLP-IST/osiris.git (fetch)  
origin  https://github.com/GoLP-IST/osiris.git (push)
```

and rename from **origin** to **upstream**

```
$ git remote rename origin upstream && git remote -v  
upstream https://github.com/GoLP-IST/osiris.git (fetch)  
upstream https://github.com/GoLP-IST/osiris.git (push)
```

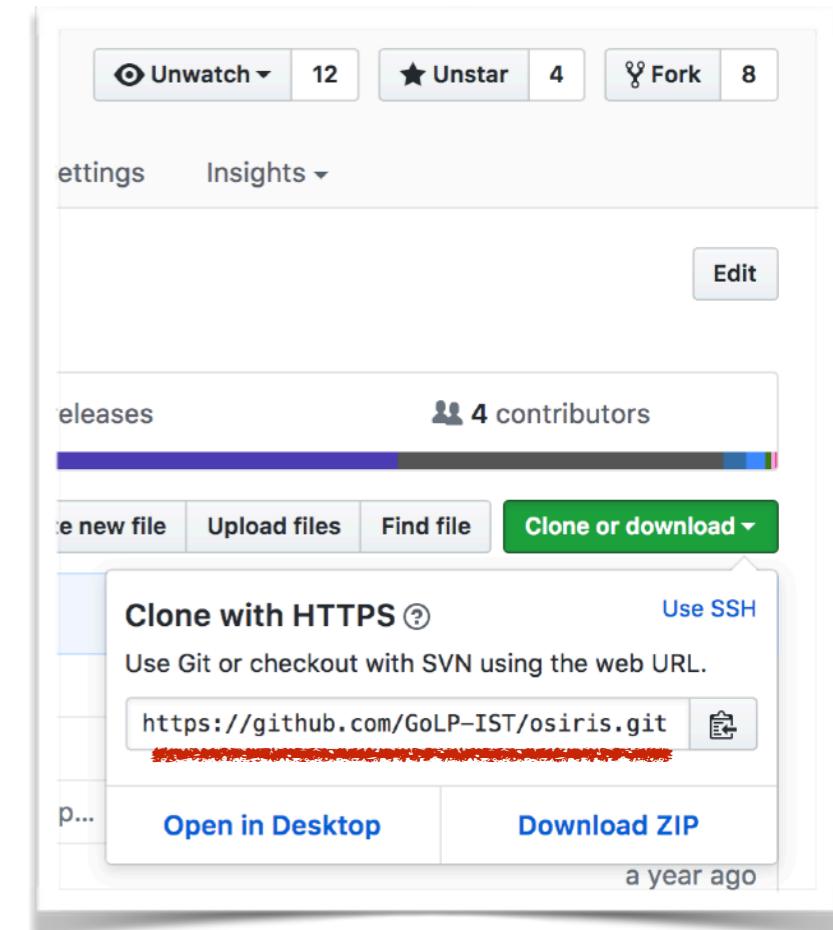
update master branch to match the official OSIRIS master branch

```
$ git checkout master && git pull --rebase upstream master
```

...

Your branch is up-to-date with ‘upstream/master’.

...



OSIRIS from a user perspective

getting OSIRIS and keep it updated



check for available OSIRIS versions (master branch has tags)

```
$ git tag
```

...

4.2.2

4.3.0

4.3.1

...

get a state of OSIRIS at a specific version

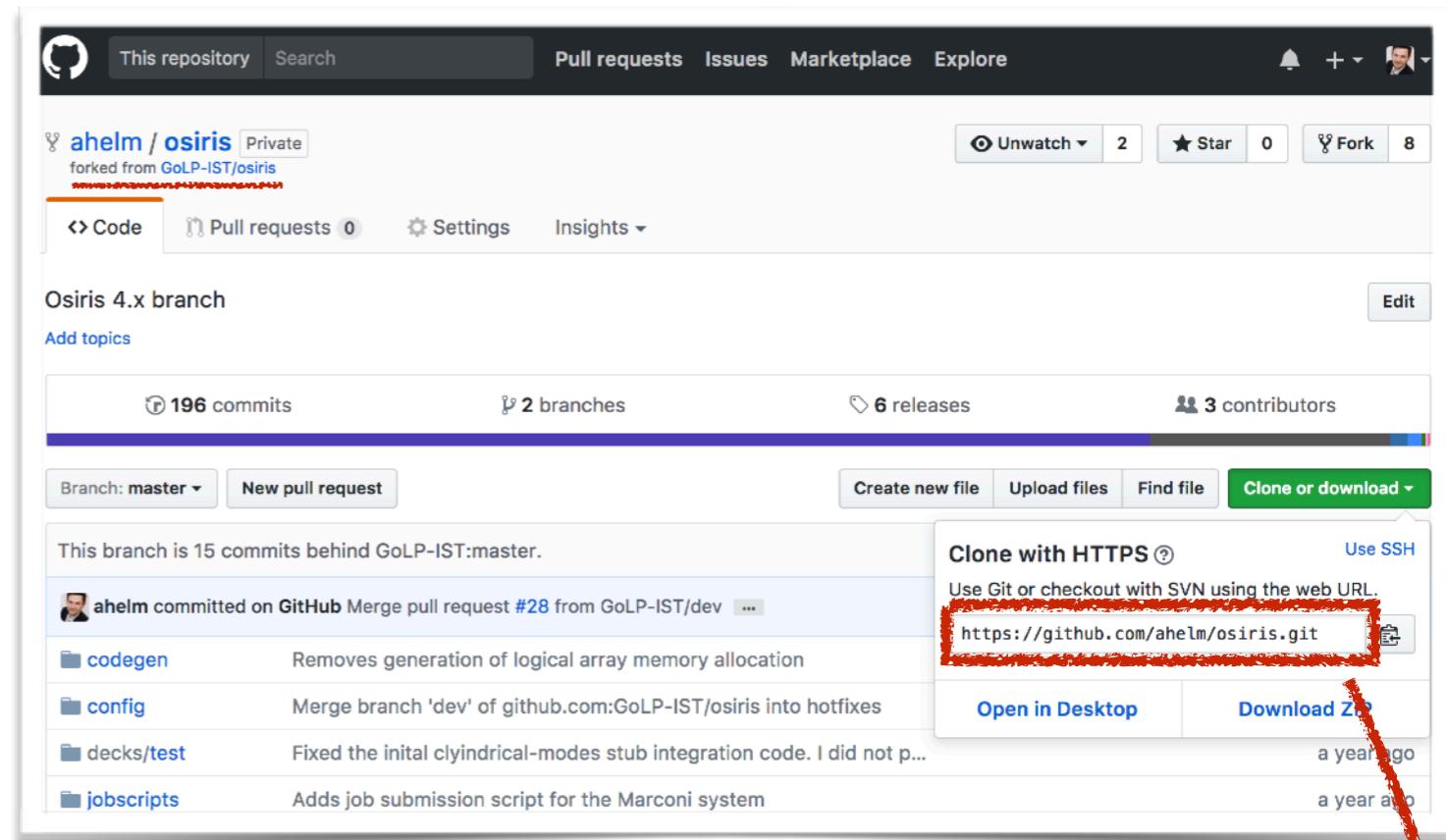
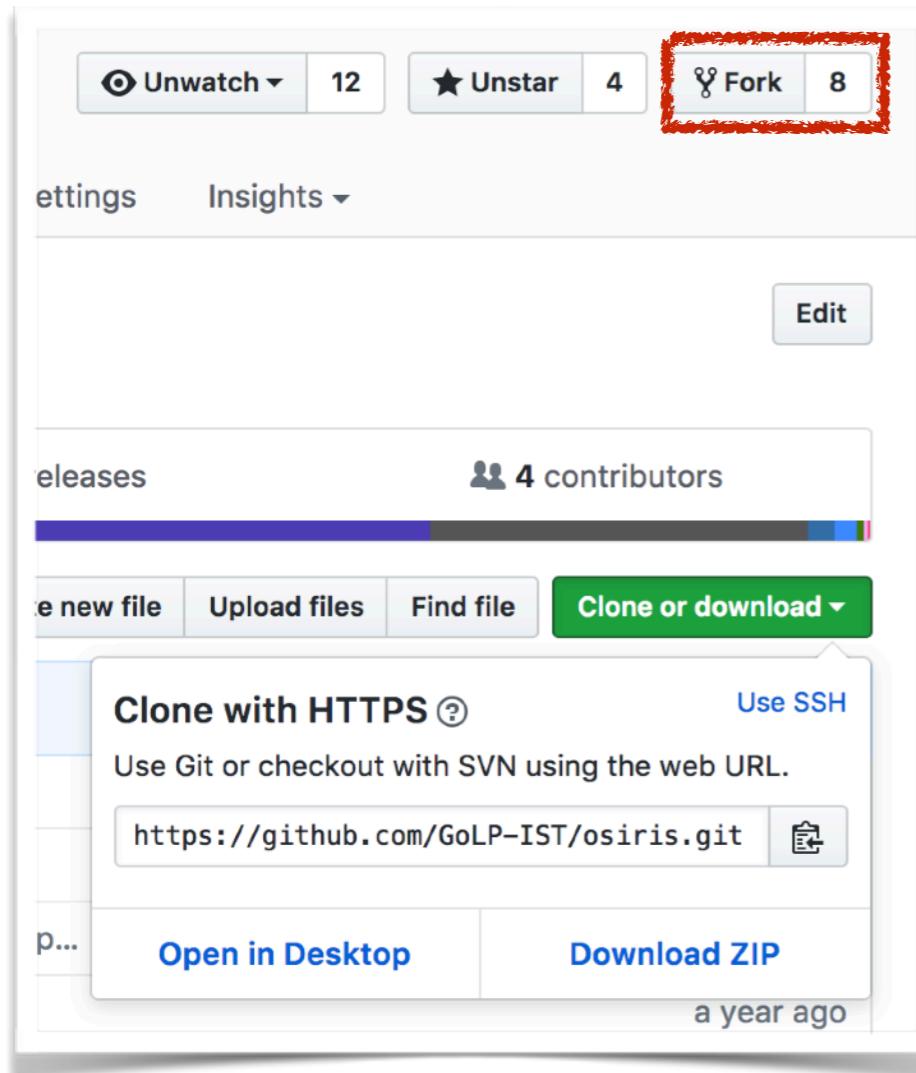
```
$ git checkout 4.2.2
```

get latest version of OSIRIS

```
$ git checkout master
```

developing and contributing to OSIRIS

creating a fork and adding it as a remote to git



fork - private GitHub repo

- ◆ private copy of a project on GitHub
- ◆ can be added as a git remote
- ◆ can be used as a backup
- ◆ can be used to collaborate with others

add your fork to your remotes on local git repository

```
$ git remote add origin \nhttps://github.com/ahelm/osiris.git
```

```
$ git remote -v\norigin  https://github.com/ahelm/osiris.git\norigin  https://github.com/ahelm/osiris.git
```

developing and contributing to OSIRIS

adding official OSIRIS dev branch and starting a new feature

checking the dev branch on your git repo

```
$ git checkout -b dev upstream/dev  
Switched to a new branch 'dev'
```

getting latest changes on dev branch

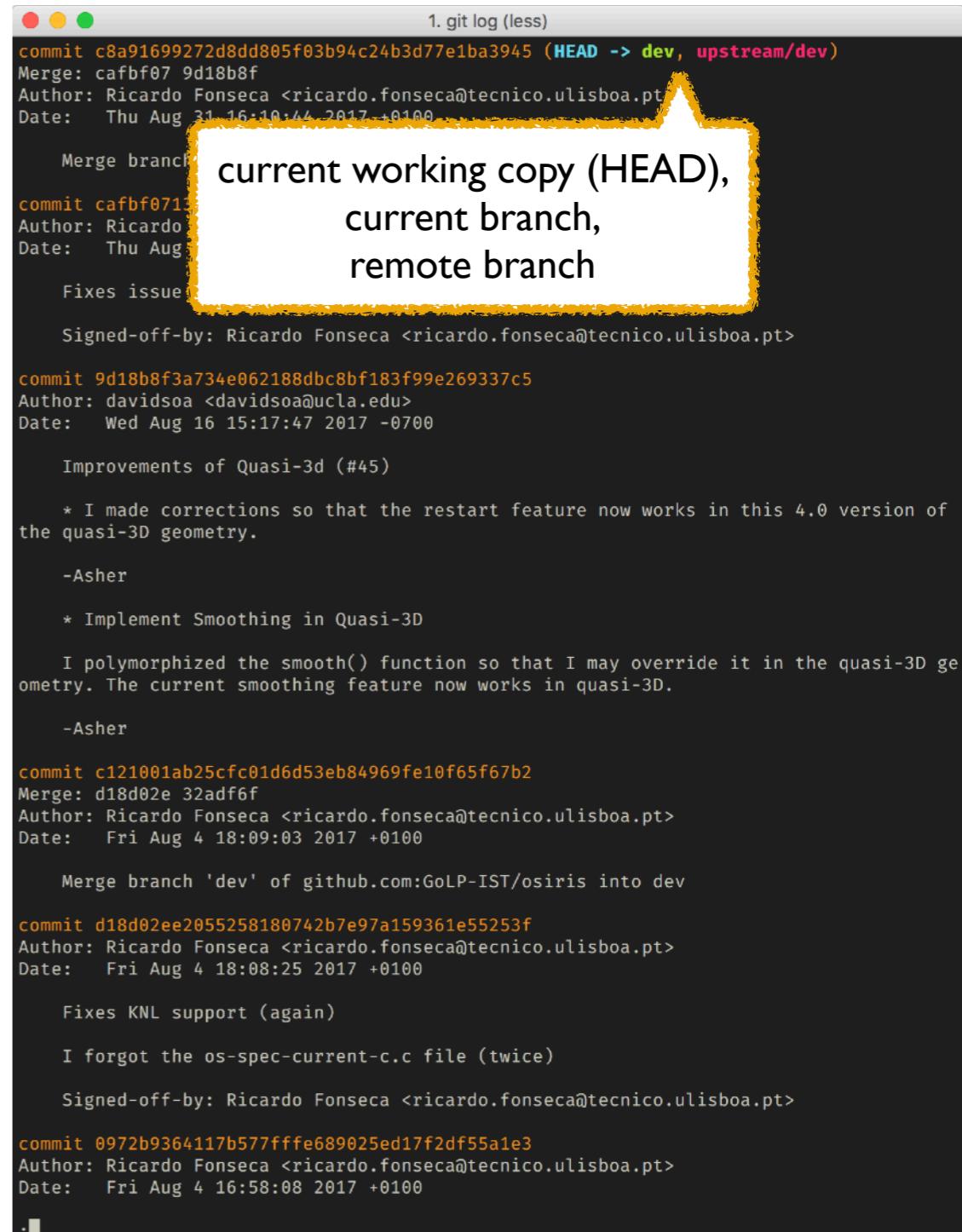
```
$ git pull --rebase upstream dev  
From https://github.com/GoLP-IST/osiris  
 * branch           dev            → FETCH_HEAD  
...
```

checking git log (latest commits/associated branches)

```
$ git log
```

checkout a new feature branch

```
$ git checkout -b new_feature upstream/dev  
Switched to a new branch 'new_feature'
```



```
1. git log (less)  
commit c8a91699272d8dd805f03b94c24b3d77e1ba3945 (HEAD -> dev, upstream/dev)  
Merge: cafbf07 9d18b8f  
Author: Ricardo Fonseca <ricardo.fonseca@tecnico.ulisboa.pt>  
Date: Thu Aug 31 16:10:44 2017 +0100  
  
    Merge branch 'dev'  
  
commit cafbf0713...  
Author: Ricardo Fonseca <ricardo.fonseca@tecnico.ulisboa.pt>  
Date: Thu Aug 31 16:10:44 2017 +0100  
  
    Fixes issue #45  
  
    Signed-off-by: Ricardo Fonseca <ricardo.fonseca@tecnico.ulisboa.pt>  
  
commit 9d18b8f3a734e062188dbc8bf183f99e269337c5  
Author: davidsoa <davidsoa@ucla.edu>  
Date: Wed Aug 16 15:17:47 2017 -0700  
  
    Improvements of Quasi-3d (#45)  
  
    * I made corrections so that the restart feature now works in this 4.0 version of  
    the quasi-3D geometry.  
  
    -Asher  
  
    * Implement Smoothing in Quasi-3D  
  
    I polymorphized the smooth() function so that I may override it in the quasi-3D ge  
ometry. The current smoothing feature now works in quasi-3D.  
  
    -Asher  
  
commit c121001ab25cf01d6d53eb84969fe10f65f67b2  
Merge: d18d02e 32adf6f  
Author: Ricardo Fonseca <ricardo.fonseca@tecnico.ulisboa.pt>  
Date: Fri Aug 4 18:09:03 2017 +0100  
  
    Merge branch 'dev' of github.com:GoLP-IST/osiris into dev  
  
commit d18d02ee2055258180742b7e97a159361e55253f  
Author: Ricardo Fonseca <ricardo.fonseca@tecnico.ulisboa.pt>  
Date: Fri Aug 4 18:08:25 2017 +0100  
  
    Fixes KNL support (again)  
  
    I forgot the os-spec-current-c.c file (twice)  
  
    Signed-off-by: Ricardo Fonseca <ricardo.fonseca@tecnico.ulisboa.pt>  
  
commit 0972b9364117b577ffe689025ed17f2df55a1e3  
Author: Ricardo Fonseca <ricardo.fonseca@tecnico.ulisboa.pt>  
Date: Fri Aug 4 16:58:08 2017 +0100  
  
:
```

developing and contributing to OSIRIS

basic git commands

list branches (* - currently selected branch)

```
$ git branch
  dev
  master
* new_feature
```

list changes on working copy (short list)

```
$ git status --short
 M source/pgc/os-emf-pgc.f03
 ?? source/pgc/new_file.f03
```

track changes (specify individual files or all changes with .) and commit

```
$ git add .
$ git commit # pops for a commit msg
```

pull changes from dev branch on new feature - might lead to conflicts

```
$ git pull --no-commit upstream dev
```

push changes to a branch on remote (e.g. your fork set up as “origin”)

```
$ git push <remote_name> <branch> # general example
$ git push origin new_feature
```

create new pull request
with new features

fixing an issue with OSIRIS

taking current stable version of OSIRIS and implementing a fix

create a new branch from official OSIRIS master

```
$ git checkout -b some_hotfix upstream/master
```

implementing the fix (in file os-some-buggy-file.f03)

```
$ git status --short
M source/os-some-buggy-file.f03
```

track changes and commit

```
$ git add .
$ git commit # pops for a commit msg
```

pull changes from master branch on hotfix - might lead to conflicts

```
$ git pull --no-commit upstream master
```

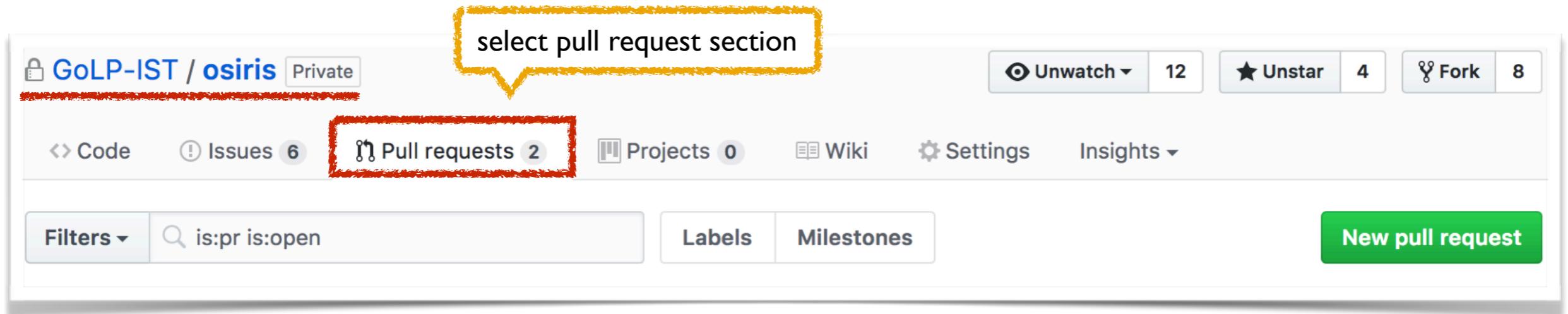
push changes to a branch on remote (e.g. your fork set up as “origin”)

```
$ git push origin some_hotfix
```

create new pull request
with fixed changes

developing and contributing to OSIRIS

create a pull request to add your changes to main OSIRIS repo



select pull request section

GoLP-IST / osiris Private

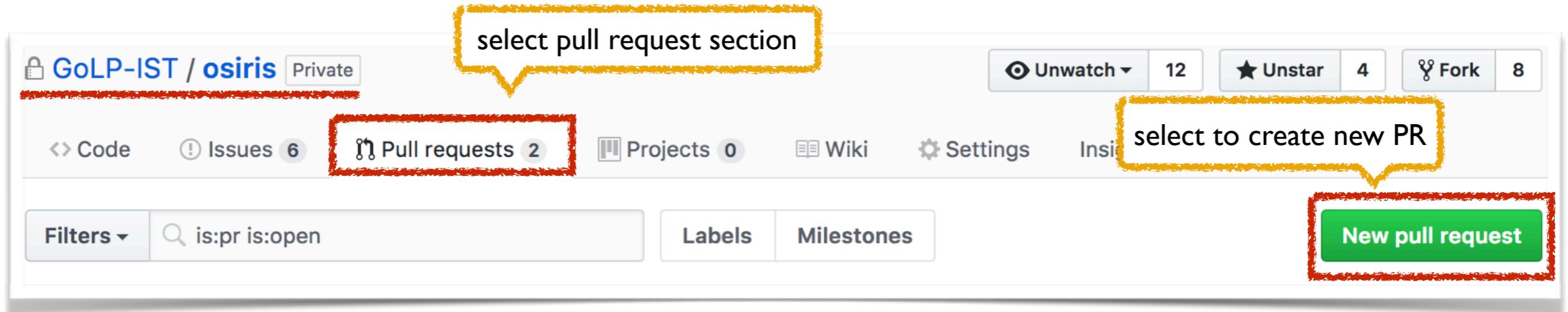
Unwatch 12 Unstar 4 Fork 8

Code Issues 6 Pull requests 2 Projects 0 Wiki Settings Insights

Filters is:pr is:open Labels Milestones New pull request

developing and contributing to OSIRIS

create a pull request to add your changes to main OSIRIS repo



developing and contributing to OSIRIS

create a pull request to add your changes to main OSIRIS repo

The screenshot shows the GitHub repository page for 'GoLP-IST / osiris'. A yellow box highlights the 'Pull requests' tab, which has a value of 2. A red box highlights the 'New pull request' button in the top right corner of the main content area. A yellow speech bubble points to the 'select pull request section' above the 'Pull requests' tab. A red speech bubble points to the 'select to create new PR' above the 'New pull request' button.

The screenshot shows the 'Open a pull request' form on GitHub. At the top, it says 'Create a new pull request by comparing changes across two branches. If you need to, you can also compare across forks.' A red box highlights the 'compare across forks' link. Below this, there are dropdown menus for 'base fork: GoLP-IST/osiris', 'base: dev', '...', 'head fork: ahelm/osiris', and 'compare: new_feature'. A green checkmark indicates 'Able to merge'. The main text area contains the message 'this is a test'. On the right, there are sections for 'Reviewers' (No reviews—request one), 'Assignees' (No one—assign yourself), 'Labels' (None yet), 'Projects' (None yet), and 'Milestone' (No milestone). At the bottom, there is a checkbox for 'Allow edits from maintainers' and a green 'Create pull request' button.

developing and contributing to OSIRIS

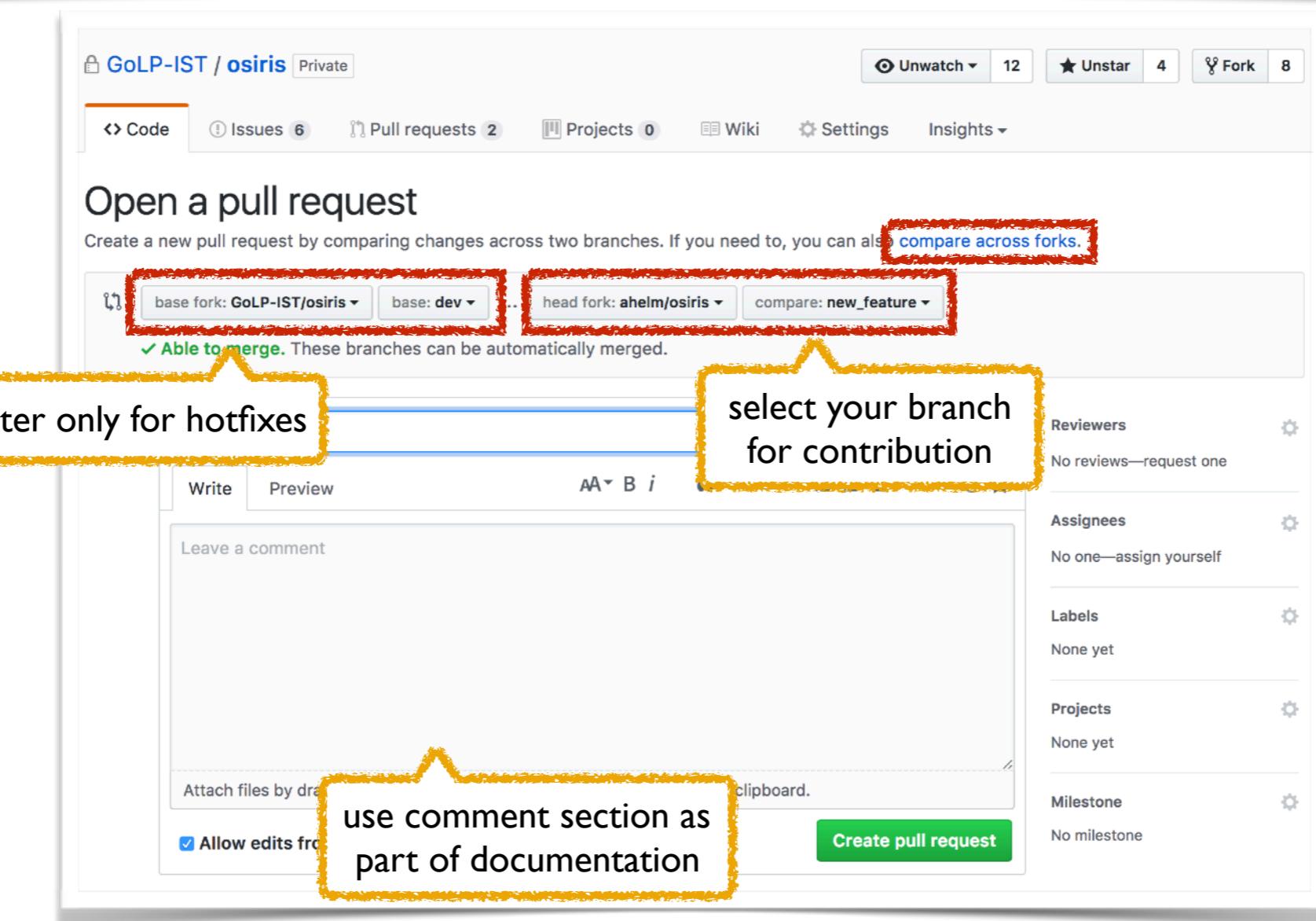
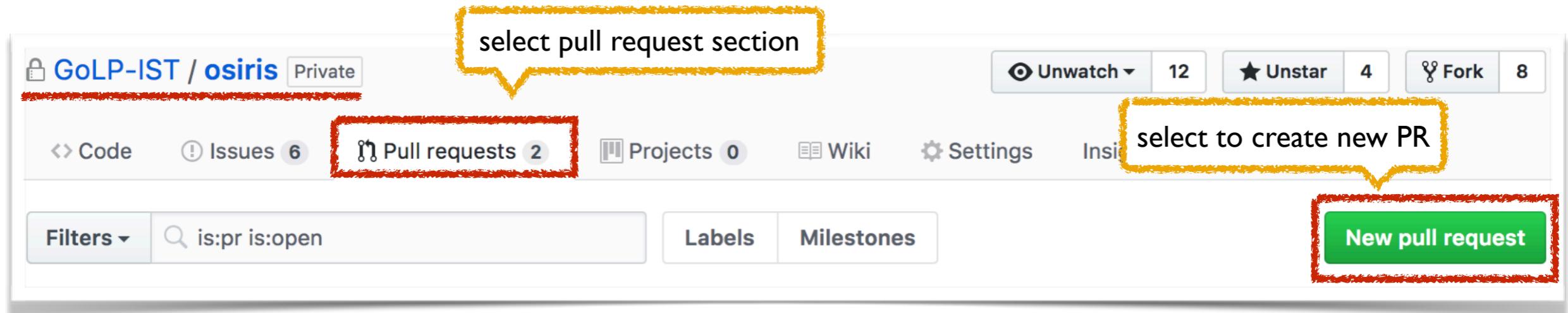
create a pull request to add your changes to main OSIRIS repo

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The screenshot shows the 'Open a pull request' form. A red box highlights the 'base fork: GoLP-IST/osiris' dropdown. A yellow box highlights the 'master only for hotfixes' text. A red box highlights the 'head fork: ahelm/osiris' dropdown. A yellow box highlights the 'select your branch for contribution' text. A red box highlights the 'compare: new_feature' dropdown. A yellow speech bubble points to the 'select your branch for contribution' text. A red speech bubble points to the 'select across forks' link. A green checkmark indicates 'Able to merge'. On the right, there are sections for 'Reviewers', 'Assignees', 'Labels', 'Projects', and 'Milestone'.

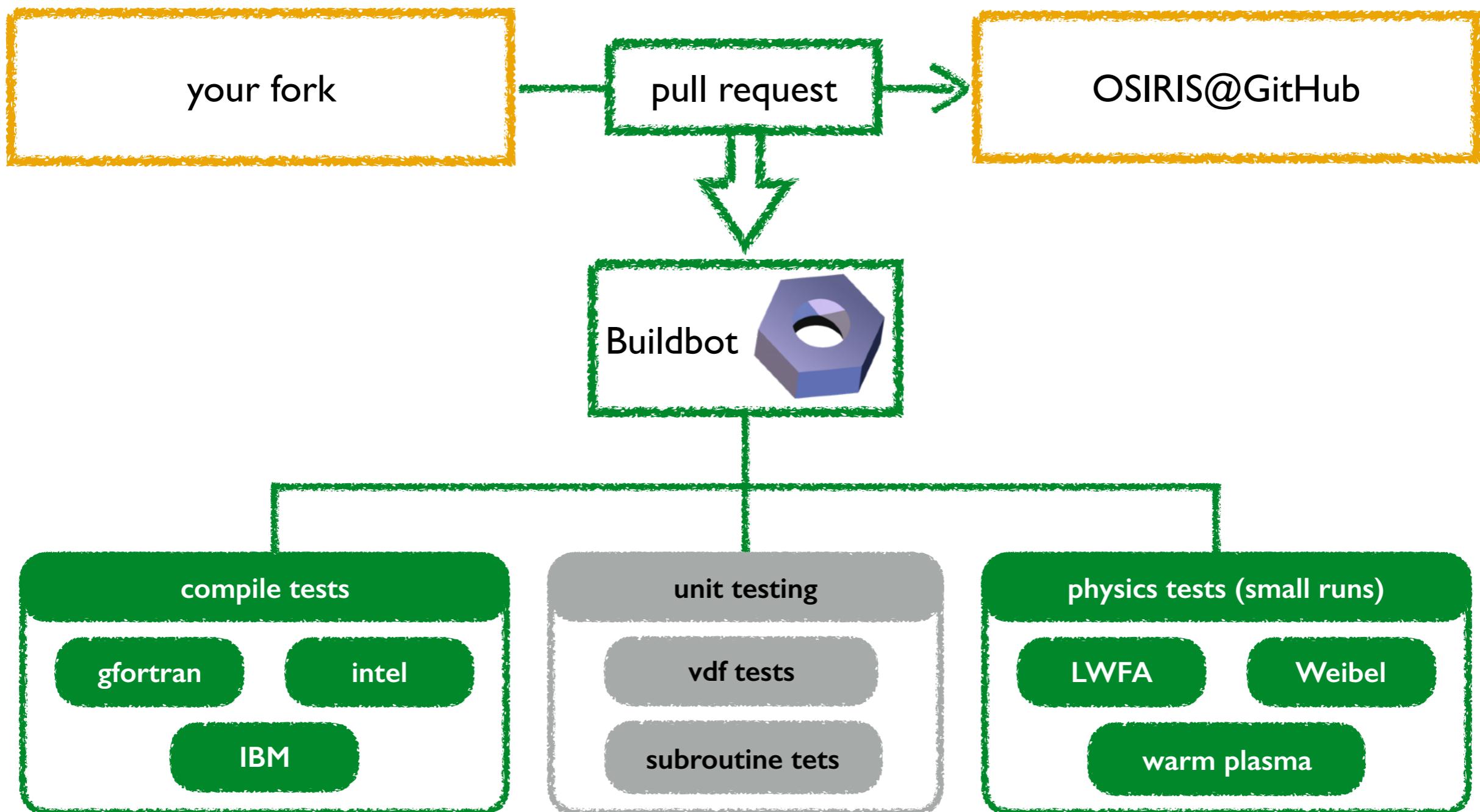
developing and contributing to OSIRIS

create a pull request to add your changes to main OSIRIS repo



Ensuring OSIRIS is stable

continues integration and buildbot



Thank you for attention!

further references

- ◆ good and interactive git tutorial: <http://try.github.com/>
- ◆ collection of git references: <https://gist.github.com/jaseemabid/1321592>
- ◆ good book: <https://github.com/pluralsight/git-internals-pdf>
- ◆ git cheat sheet: <https://www.git-tower.com/blog/git-cheat-sheet/>