

Continuous Documentation for Fast-Moving Projects

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Lawrence Berkeley National Laboratory

**SC19 BoF: *Software Engineering and Reuse in
Modeling, Simulation, and Data Analytics for Science
and Engineering***

November 20th, 2019

Let's talk Documentation

Modern Approaches

Why?

- **Growth:** Entrypoint for users & collaboration, new developers
- **Risk mitigation:** reduce “bus-factor” and tribal knowledge

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- **Growth:** Entrypoint for users & collaboration, new developers
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What?¹

- Tutorials
- How-To-Guides
- Discussions
- Reference
 - Changelog
 - Upgrade Guide

Ref. 1: <https://www.divio.com/blog/documentation/>

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Modern Approaches

Why?

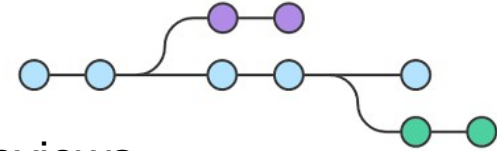
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How?

- Reviews
- Single Source of Truth
- Multi-(reader-)platform



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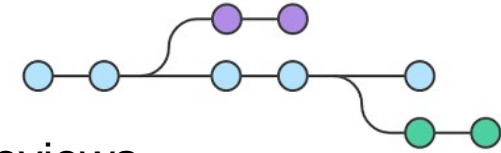
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- Continuous / automated
- in-sync with source

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Wikis?
tex/pdf manuals?

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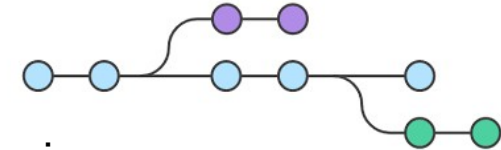
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too static, disjoint from source VCS

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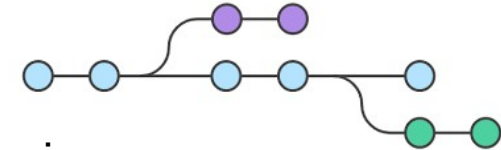
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Versioned Sphinx

And coupling to Doxygen

Source: Declaration

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35 class Iteration : public Attributable
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files

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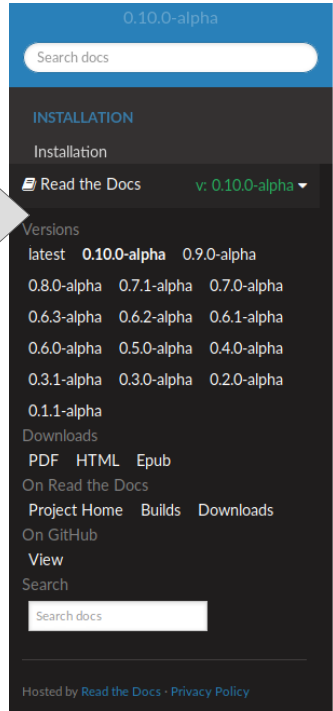
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Docs » openPMD C++ & Python API

[Edit on GitHub](#)

openPMD C++ & Python API

This library provides an abstract API for openPMD file handling. It provides both support for writing & reading into various formats and works both serial and parallel (MPI). Implemented backends include HDF5 and ADIOS1.

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Supported openPMD Standard Versions

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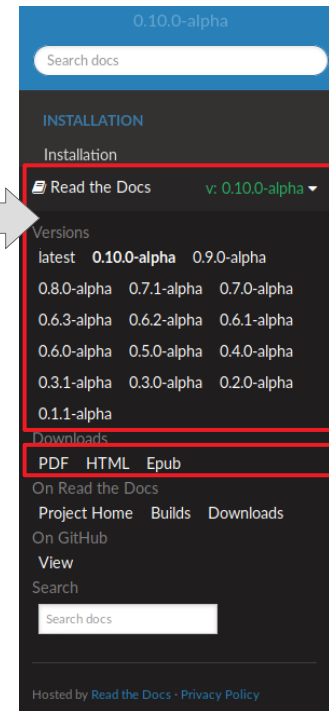
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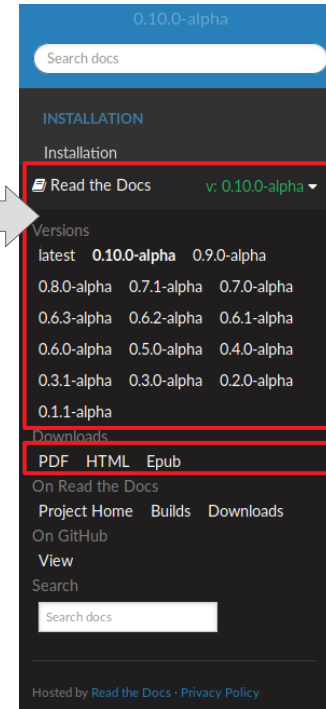
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0.10.0-alpha

Search docs

INSTALLATION

Installation

Read the Docs v: 0.10.0-alpha

Versions

latest	0.10.0-alpha	0.9.0-alpha
0.8.0-alpha	0.7.1-alpha	0.7.0-alpha
0.6.3-alpha	0.6.2-alpha	0.6.1-alpha
0.6.0-alpha	0.5.0-alpha	0.4.0-alpha
0.3.1-alpha	0.3.0-alpha	0.2.0-alpha
0.1.1-alpha		

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GitLab



GitHub



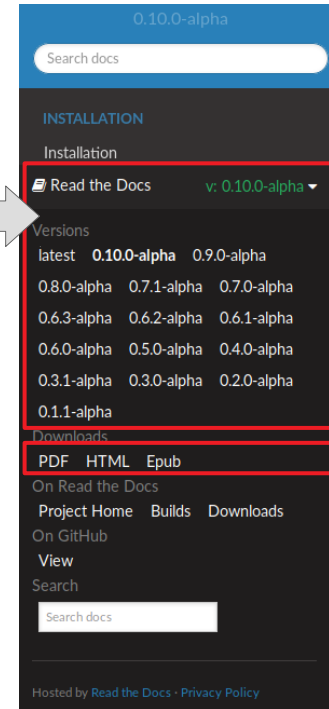
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Real-World Examples

Reuse as Templates for your Project

- github.com/xtensor-stack/xtensor
good first example, included index
- github.com/openPMD/openPMD-api
Examples from source, Unix-style INSTALL/NEWS
- github.com/ComputationalRadiationPhysics/picongpu
Page content from source **file & class docstrings**

