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# **The Lorentz Phantom Documentation**

***Release 0.0.1***

**Lorentz Workshop: Quantitative 3D X-Ray Imaging**

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**The Lorentz Phantom web site provides:**

- Information on the 2016 Lorentz Workshop: Quantitative 3D X-Ray Imaging
- The Lorentz Phantom definition
- Access to the tomographic data shared during the workshop.



This guide is maintained on [GitHub](#).



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**About**

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**Welcome to the Lorentz Phantom web site. Here you will find:**

- Information on the 2016 Lorentz Workshop: Quantitative 3D X-Ray Imaging
- The Lorentz Phantom definition
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## Introduction

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### 2.1 The Lorentz Phantom

Describe here the Lorentz phantom

### 2.2 Data Share

Access to the tomographic data share is implemented via [Globus](#). To access the data enter [request](#).

All data sets can be accessed [\[B2\]](#) and reconstructed using [tomoPy \[B1\]](#) and [ASTRA \[B4\], \[B3\]](#).

#### 2.2.1 APS

Here is the APS dataset description

#### 2.2.2 Elettra

Here is the Elettra dataset description

#### 2.2.3 ESRF

Here is the Elettra dataset description



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### Examples

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Describe here the examples

#### 3.1 Phantom

Here you can find examples for `astra.py` and `tomopy.py`

#### 3.2 Reconstruction

Here you can find examples for reconstructing the shared data sets.





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**References**

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## Indices and tables

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- `genindex`
- `modindex`
- `search`



- [B1] Gürsoy D, De Carlo F, Xiao X, and Jacobsen C. Tomopy: a framework for the analysis of synchrotron tomographic data. *Journal of Synchrotron Radiation*, 21(5):1188–1193, 2014.
- [B2] De Carlo F, Gursoy D, Marone F, Rivers M, Parkinson YD, Khan F, Schwarz N, Vine DJ, Vogt S, Gleber SC, Narayanan S, Newville M, Lanzirotti T, Sun Y, Hong YP, and Jacobsen C. Scientific data exchange: a schema for hdf5-based storage of raw and analyzed data. *Journal of Synchrotron Radiation*, 21(6):1224–1230, 2014.
- [B3] W.J. Palenstijn, K.J. Batenburg, and J. Sijbers. Performance improvements for iterative electron tomography reconstruction using graphics processing units (gpus). *Journal of Structural Biology*, 176(2):250 – 253, 2011. URL: <http://www.sciencedirect.com/science/article/pii/S1047847711002267>, doi:<http://dx.doi.org/10.1016/j.jsb.2011.07.017>.
- [B4] Wim van Aarle, Willem Jan Palenstijn, Jan De Beenhouwer, Thomas Altantzis, Sara Bals, K. Joost Batenburg, and Jan Sijbers. The \ASTRA\ toolbox: a platform for advanced algorithm development in electron tomography. *Ultramicroscopy*, 157():35 – 47, 2015. URL: <http://www.sciencedirect.com/science/article/pii/S0304399115001060>, doi:<http://dx.doi.org/10.1016/j.ultramic.2015.05.002>.