BornAgain

A status update

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# Release history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.9</td>
<td>Jul 2017</td>
<td>Magnetization formalism, GUI saving mechanism</td>
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<tr>
<td>1.10</td>
<td>Oct 2017</td>
<td>Mesocrystal in GUI, import Python to GUI</td>
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<tr>
<td>1.11</td>
<td>Mar 2018</td>
<td>Off-specular in GUI, Fourier transform, magnetic scattering formalism in GUI</td>
</tr>
<tr>
<td>1.12</td>
<td>May 2018</td>
<td>Specular in GUI, real-space view of sample, finite 2d lattices, website migration</td>
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Magnetic neutron scattering

- Materials with uniform magnetization density
- Beam polarization and polarization analyzer
- Example:
Mesocrystals in GUI
Finite 2d lattices
Superlattices

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Infrastructure

- Development organization:
  - Source control: github
  - Code review: github
  - Issue tracking: Redmine
  - Management of release cycles: Redmine

- Code stability:
  - Continuous integration: github, buildbot
  - Unit testing: googletest
  - Functional tests: ad hoc

- Documentation:
  - Website: Hugo
  - Theory manual
  - API documentation: Doxygen
Demo
Future plans

- Specular reflectivity (Dmitry)
- GUI functionality:
  - Real space view
  - Undo/redo
  - further improvements in UX
- Model for magnetic roughness / domains
- Fitting:
  - Align fitting API with SciPy
  - Fit off-specular data
- Cloud access
- Speculative features:
  - Alternative cost functions
  - Machine learning