SPACEINN WP4 Helioseismology

Deliverable D4.8 Web site providing access to simulated data

Coordinated by the Max-Planck-Institut für Sonnensystemforschung (MPG)

Following the recommendations of the first local helioseismology working group meeting (see D4.9), the selected simulation codes are available under 'Modelling Tools' and the selected data sets are available under 'Simulated Data' in the SPACEINN local helioseismology website: http://www.mps.mpg.de/projects/seismo/SpaceInn/index.html .

Screen shots of the webpages are shown below (Figs. 1-4).

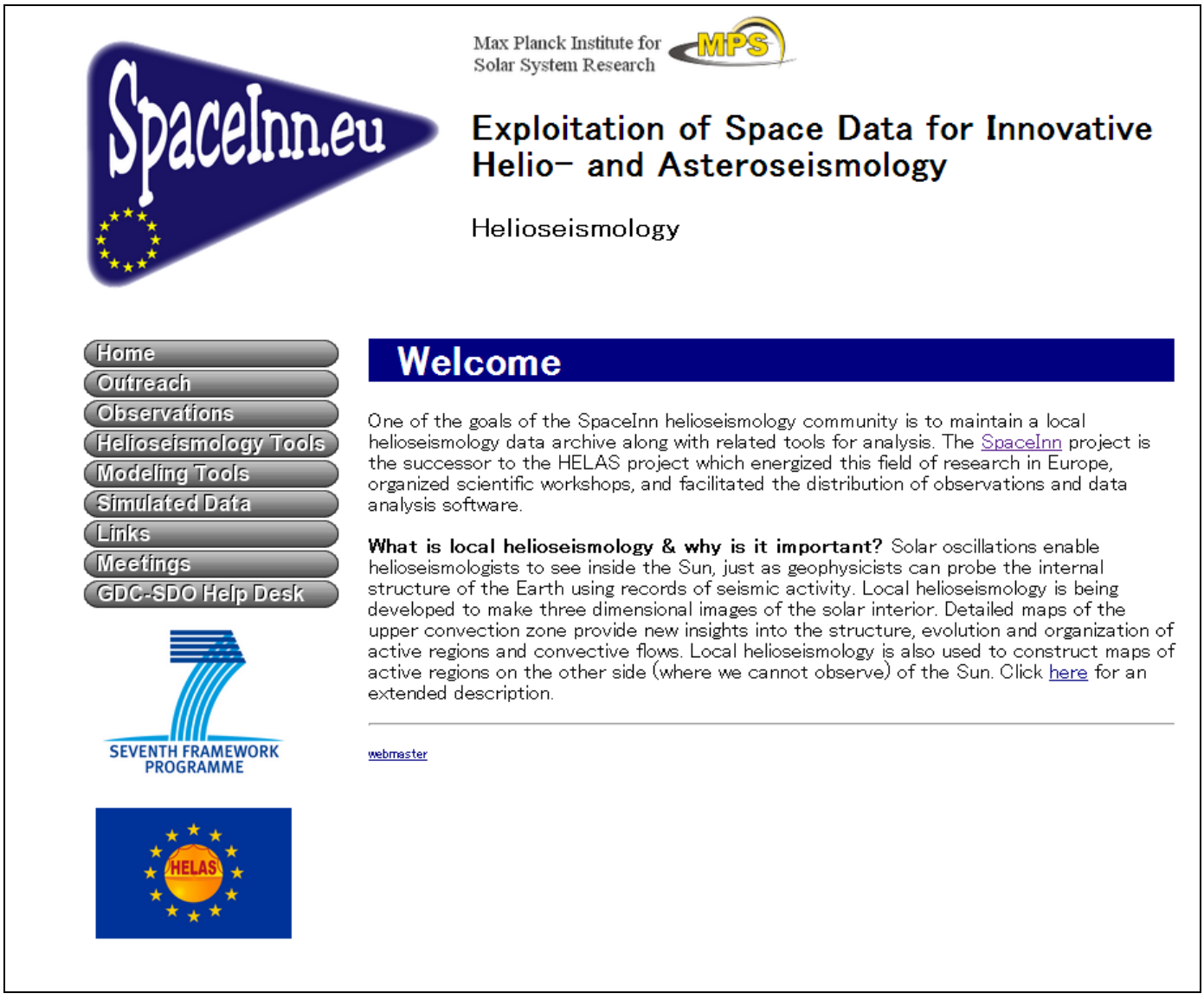


Figure 1. Screen shot of the top page of SPACEINN local helioseismology website

Figure 2. Screen shot of the website for modeling tools

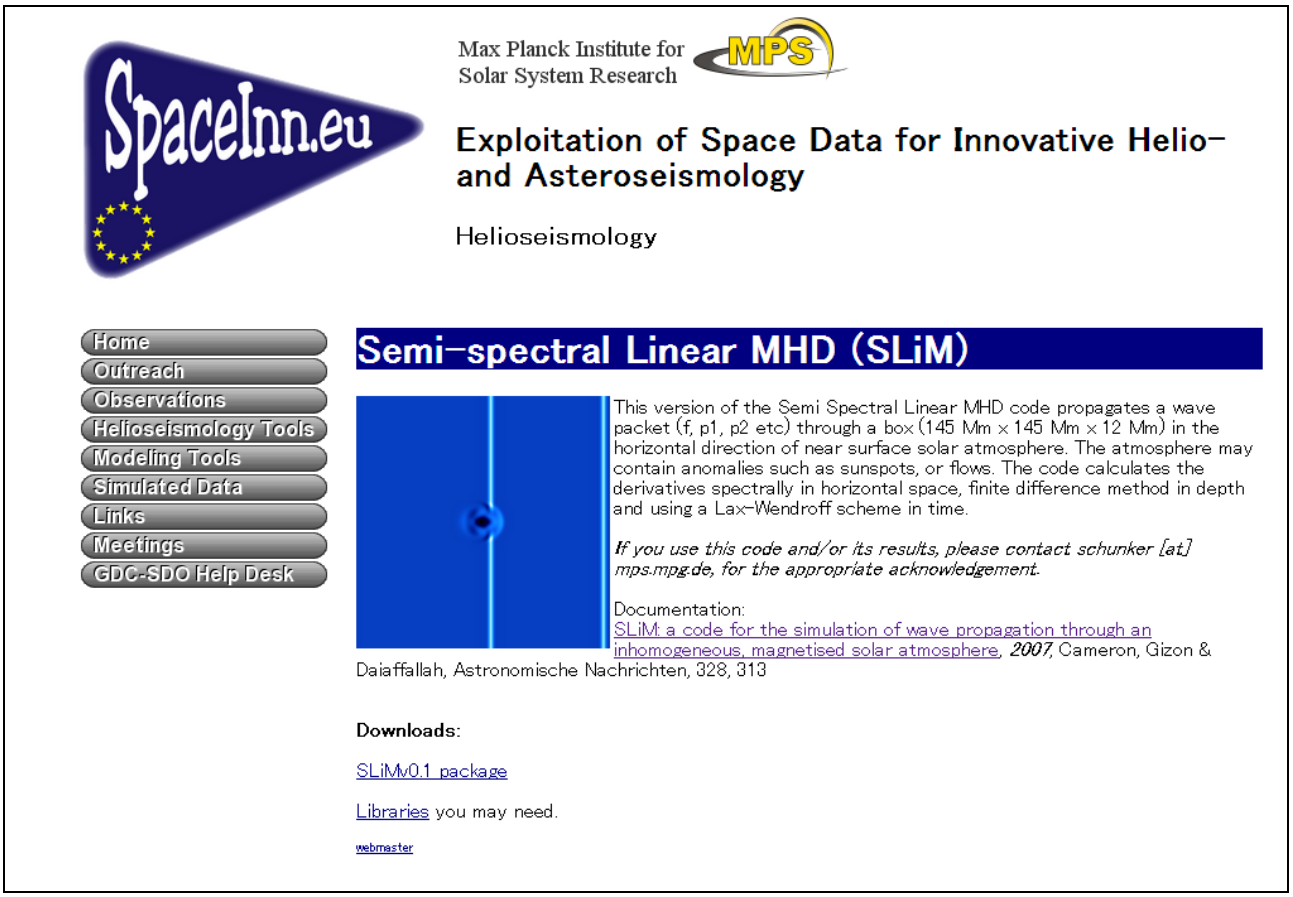
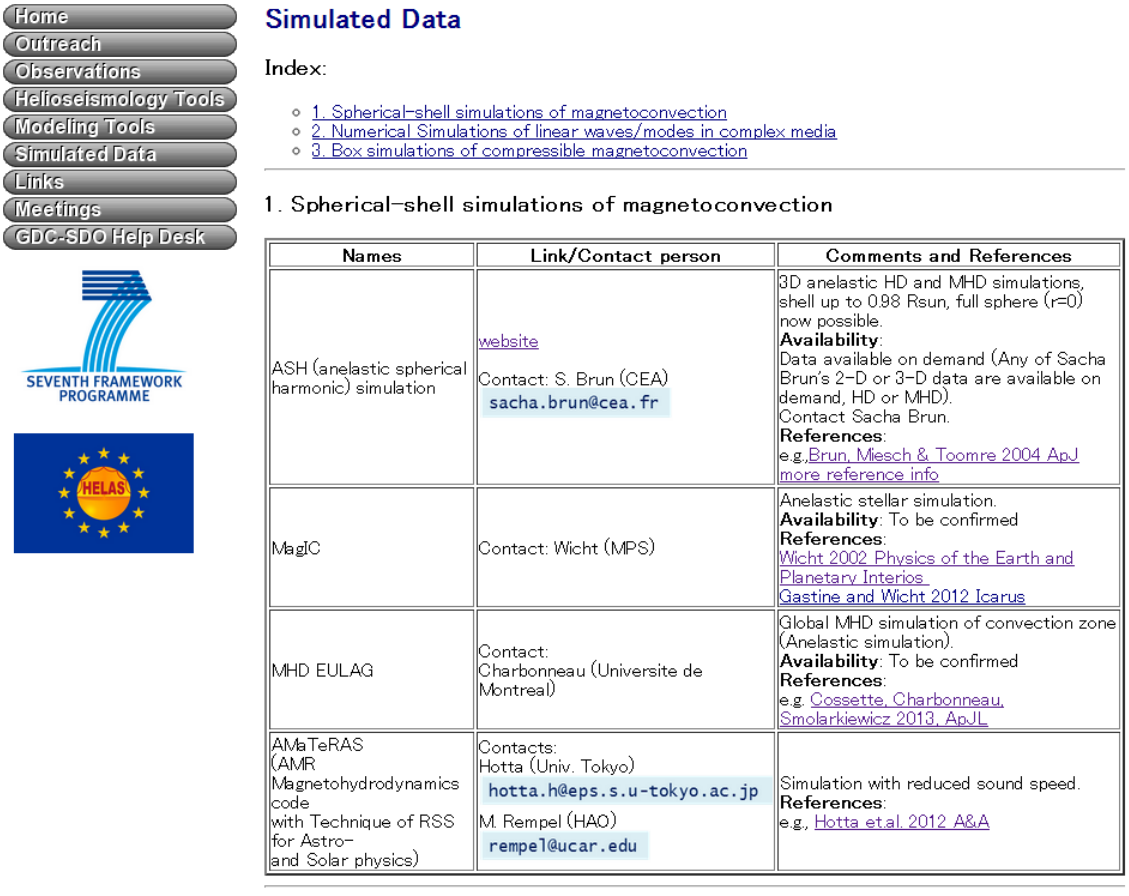


Figure 3. Screen shot of an example of some modeling tools (SLiM code example)



2. Numerical Simulations of linear waves/modes in complex media

Names	Link/Contact person	Availability
SPARC and Glass	website Contact: S. Hanasoge hanasoge@mps.mpg.de E. Papini (MPS) papini@mps.mpg.de	SPARC : Linear HD, plane-parallel geometry Glass : Linear HD, 3D spherical geometry – full sphere **Availability**: SPARC codes can be downloaded from the website
SLiM (Semi-spectral Linear MHD) code	website Contact: R.Cameron (MPS) cameron@mps.mpg.de H. Schunker (MPS) schunker@mps.mpg.de	Simulation of wave propagation through an inhomogeneous, magnetised solar atmosphere Cameron et al. 2007 AN **Availability**: Older version is available on the web. For newer version contact Cameron.
IAC MHD Mancha code	website Contact: T. Felipe(NWRA) tobias@cora.nwra.com E. Khomenko(IAC) khomenko@iac.es	The current working version of the code is 2.5D/3D magnetohydrodynamical code with hyper diffusion algorithms and Cartesian grid written in Fortran 90 (2.5D means that all vector quantities are in three dimensions, while the derivatives are only done in two dimensions). **Availability**: Contact Felipe or Khomenko for current version data. Newer version will be available at the webapge around later 2014.
SAC code	Sheffield group	**Reference**: Shelyag et al. 2008 A&A, Shelyag et al. 2009 A&A
Pencil Code	website	Codes for high-order finite-difference code for compressible hydrodynamic flows with magnetic fields. **Availability**: open, extendable code
Artificial helioseismology data by Thomas Hartlep	website Contact: Thomas Hartlep (see website)	Numerical simulations of helioseismic oscillations in a 3D full sphere Sun. Several datasets with different setups are available. **Availability**: Datasets are downloadable from the website
Artificial helioseismology data by K. Parchevsky	Contact: K. Parchevsky	3D simulation of acoustic waves in the solar upper convection zone. **Reference**: e.g., Parchevsky & Kosovichev 2007 ApJ

3. Box simulations of compressible magnetoconvection

Names	Link/Contact person	Comments
MURaM	website Contact: M. Rempel (HAO) rempel@ucar.edu R. Cameron (MPS) cameron@mps.mpg.de	3D MHD simulation including radiative transfer **Reference**: Voegler et al. 2005 A&A **Availability**: Will be open on their website Currently no documents for users yet. Some snapshots and shorter time series (1-2hr) are available at MPS. For this, contact R. Cameron. For sunspot data and longer (1day –) data, contact M. Rempel.
STAGGER	website Contact: Bob Stein (Michigan State Univ.) steinr@msu.edu	3D MHD convection simulation. **Reference**:e.g., Stein et al. 2009 AIPC, Stein et al.2009 ASPC, Stein 2012 LRSP **Availability**: Some datacubes are available on the website. Selected datacubes (96Mmx96Mmx20Mm, ~5hr) of Quiet Sun (with weak magnetic field) are available at MPS. For this, contact: K. Nagashima (MPS) nagashima@mps.mpg.de
Bifrost	Research Group in Oslo	Stellar atmosphere simulation from the convection zone to the upper atmosphere (corona). **Reference**: Gudiksen et al. 2011, A&A
CO5BOLD	website	3D radiative hydrodynamics simulation **Reference**:Freytaget al. 2012 J, Nutto, Steiner, Roth 2012 A&A
Pencil Code	website	**Availability**: Codes are open and extendable

webmaster

Figure 4. Screen shot of the website for simulated data