

## SPACEINN/WP3, Data Handling and Archiving

### List of data-bases and tools to be considered for implementation in the *Seismic Plus* portal (Deliverable 3.1)

K. Belkacem & E. Michel, Paris Observatory  
04/12/2013

As part of the Work package “Data Handling and Archiving”, a large number of data sources related to solar/stellar seismology will be referenced and described at a global well-identified public portal. The “Seismic Plus” portal aims at providing a coherent picture of the different data sources with a standard description. A set of tools will also be implemented enabling a coordinated access and use of data.

In this framework, we provide below the list of data sources (see Table. 1) and the list of tools that will be considered for implementation in the portal (see Table. 2).

Table 1 : List of data sources to be considered for implementation in the *Seismic Plus* portal

Dataset	Object(s)	Data type	Website(s)
Time series			
CoRoT - astero side	stars	- Light curves (1D, 32s sampling) - Light curves from imagerettes (1D, 32s)	CoRoT archives: <a href="http://idoc-corot.ias.u-psud.fr/">http://idoc-corot.ias.u-psud.fr/</a> see also <a href="http://sdc.cab.inta-csic.es/corotfa/">sdc.cab.inta-csic.es/corotfa/</a> and <a href="http://cdsarc.u-strasbg.fr/viz-bin/Cat?B/corot">http://cdsarc.u-strasbg.fr/viz-bin/Cat?B/corot</a>
CoRoT - exo side	stars	- Chromatic light curves (1D, 32 or 512s sampling) - Monochromatic light curves (1D, 32 or 512s sampling) - Light curves from imagerettes (1D, 32s)	CoRoT archives: <a href="http://idoc-corot.ias.u-psud.fr/">http://idoc-corot.ias.u-psud.fr/</a> see also <a href="http://sdc.cab.inta-csic.es/corotfa/">sdc.cab.inta-csic.es/corotfa/</a> and <a href="http://cdsarc.u-strasbg.fr/viz-bin/Cat?B/corot">http://cdsarc.u-strasbg.fr/viz-bin/Cat?B/corot</a>
<i>Kepler</i>	stars	- Light curves (1D, short cadence, 1 mns) - Light curves (1D, long cadence, 30 mns)	KASOC archive <a href="http://kasoc.phys.au.dk/">http://kasoc.phys.au.dk/</a>  MAST archive <a href="http://archive.stsci.edu/kepler/">http://archive.stsci.edu/kepler/</a>
Mark-1	sun	- Integrated disc velocities (1D)	<a href="http://svo2.cab.inta-csic.es/vocats/marki/">http://svo2.cab.inta-csic.es/vocats/marki/</a>
SDO-HMI	sun	- Dopplergrams (3D, maps of solar surface velocity) - Magnetograms (3D, maps of the photospheric magnetic field) - Continuum Intensity (3D)	<a href="http://jsoc.stanford.edu/">http://jsoc.stanford.edu/</a>  see also for pre-processed data: <a href="http://www.mps.mpg.de/projects/seismo/SpaceInn/DATA/data_access.html">http://www.mps.mpg.de/projects/seismo/SpaceInn/DATA/data_access.html</a>
SDO-AIA	sun	- Images of the Sun in 10 wavelengths every 10 seconds (3D)	<a href="http://jsoc.stanford.edu/">http://jsoc.stanford.edu/</a>

SOHO-Golf	sun	- Integrated disc velocities (1D)	MEDOC <a href="http://idc-solar.ias.u-psud.fr/index.jsp">http://idc-solar.ias.u-psud.fr/index.jsp</a>
SOHO-Virgo	sun	- Integrated disc photometry (1D) (solar total and spectral irradiance and spectral radiance variation)	MEDOC <a href="http://idc-solar.ias.u-psud.fr/index.jsp">http://idc-solar.ias.u-psud.fr/index.jsp</a>
Ground-based CoRoT complementary archive	stars	- spectra series (2D)	under construction part of the Space Inn Objectives
SOHO-MDI	sun	- Dopplergrams (3D) - Magnetograms (3D)	<a href="http://jsoc.stanford.edu/">http://jsoc.stanford.edu/</a> or <a href="http://idc-solar.ias.u-psud.fr/index.jsp">http://idc-solar.ias.u-psud.fr/index.jsp</a>  see also for pre-processed data: <a href="http://www.mps.mpg.de/projects/seismo/SpaceInn/DATA/data_access.html">http://www.mps.mpg.de/projects/seismo/SpaceInn/DATA/data_access.html</a>
GONG	sun	- Dopplergrams (3D) - Magnetograms series (3D) - Radial velocity (1D) - Intensity series (1D)	<a href="http://gong.nso.edu/">http://gong.nso.edu/</a>  see also for pre-processed data: <a href="http://www.mps.mpg.de/projects/seismo/SpaceInn/DATA/data_access.html">http://www.mps.mpg.de/projects/seismo/SpaceInn/DATA/data_access.html</a>
BISON	sun	- Integrated disc velocities (1D)	<a href="http://bison.ph.bham.ac.uk/index.php?page=bison">http://bison.ph.bham.ac.uk/index.php?page=bison</a>
Spectroscopy/individual spectra			
Gaia ESO Survey	stars	- spectra	<a href="http://ges.roe.ac.uk/">http://ges.roe.ac.uk/</a>
Apogee (part of the Sloan Digital Survey)	stars	- spectra	<a href="http://www.sdss3.org/surveys/apogee.php">http://www.sdss3.org/surveys/apogee.php</a>
Gaudi	stars	- spectra	<a href="http://sdc.cab.inta-csic.es/gaudi/">http://sdc.cab.inta-csic.es/gaudi/</a>
Stellar Models			
Stellar and solar models and oscillation parameters	theoretical stars + sun	stellar internal structures	under study as part of the SpaceInn project
Stellar Parameters			
SSI	stars + sun	- Seismic indices	under construction as part of the Space Inn project
Complementary data of CoRoT database	stars	- Effective temperature - Surface gravity - Metallicity	CoRoT archives: <a href="http://idoc-corot.ias.u-psud.fr/">http://idoc-corot.ias.u-psud.fr/</a> see also <a href="http://sdc.cab.inta-csic.es/corotfa/">sdc.cab.inta-csic.es/corotfa/</a> and <a href="http://cdsarc.u-strasbg.fr/viz-bin/Cat?B/corot">http://cdsarc.u-strasbg.fr/viz-bin/Cat?B/corot</a>
Complementary data of CoRoT database	stars	- Effective temperature - Surface gravity - Metallicity	KASOC archive <a href="http://kasoc.phys.au.dk/">http://kasoc.phys.au.dk/</a>  Revised effective temperature by <a href="http://vizier.cfa.harvard.edu/viz-bin/VizieR-3?-source=J/ApJS/199/30/table7">Pinsonneault et al. 2012</a> ( <a href="http://vizier.cfa.harvard.edu/viz-bin/VizieR-3?-source=J/ApJS/199/30/table7">http://vizier.cfa.harvard.edu/viz-bin/VizieR-3?-source=J/ApJS/199/30/table7</a> )

Apogee (part of the Sloan Digital Survey)	stars	- Effective temperature - Surface gravity - Metallicity	<a href="http://www.sdss3.org/surveys/apogee.php">http://www.sdss3.org/surveys/apogee.php</a>
Gaia ESO Survey	stars	- Effective temperature - Surface gravity - Metallicity	<a href="http://ges.roe.ac.uk/">http://ges.roe.ac.uk/</a>
Others			
Solar events	sun	- Heliophysics events database	<a href="http://www.lmsal.com/hek/">http://www.lmsal.com/hek/</a>

Table 2 : List of tools considered for implementation in the *Seismic Plus* portal

Tool	Object(s)	Input(s)	Output(s)
Object resolver	stars	- star identifier - list of star identifiers	- star / list of star identifier in the different considered catalogs
Where-is-what	sun/stars	- star identifier - list of star identifiers - time slot(s)	identification and location of : - data-bases containing data for these objects and/or time slot(s) - type of available data
Data-queries	sun/stars	- star identifier - list of star identifiers - data type - selection criteria (range of effective temperature / time slot(s) / etc...)	- visualisation of observations metadata - access link to the data
Seismic masses and radii	stars	- Large separation - Frequency of the maximum power - Effective temperature	- Seismic estimates of masses and radii from scaling relations
Seismic effective temperature	stars	- distance - extinction - apparent magnitude - Large separation - Frequency of the maximum power	- Seismic estimate of effective temperature
Seismic distance	stars	- extinction - apparent magnitude - Large separation - Frequency of the maximum power	- Seismic estimate of the distance
Visualisation of lighth-curves	sun / stars	- lighth-curve	- interactive plot of the lighth-curve (i.e. intensity or velocity versus time)
Visualisation of power spectrum	sun / stars	- lighth-curve	- interactive plot of the computed Fourier Transform of the lighth-curve
Visualisation of seismic diagrams	stars	- Large separation - Frequency of the maximum power - Period spacing	- interactive plots of the seismic indices
Description and access to pre-processes helioseismic tools	sun	- inputs from WP 4 ( <a href="http://www.mps.mpg.de/projects/seismo/SpaceInn/SW/index.html">http://www.mps.mpg.de/projects/seismo/SpaceInn/SW/index.html</a> )	Access to tools for local helioseismic analysis : - Ring Diagram Analysis Pipeline - Synoptic flow maps Fitting Travel Times - Holography - etc...