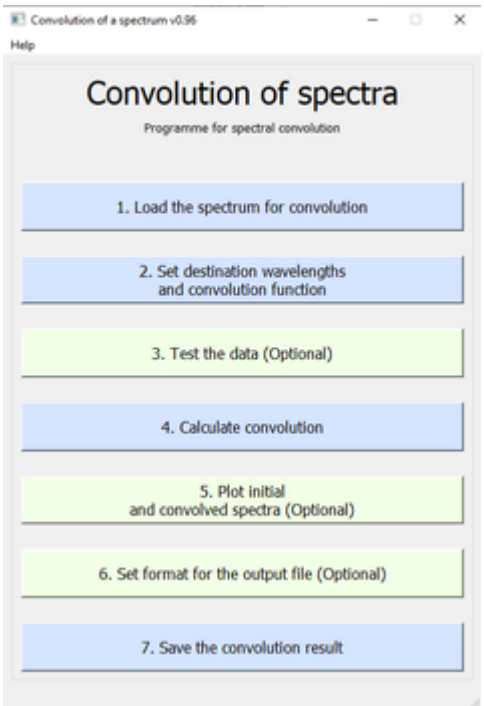
SSHADE Users Newsletter - 2021-02

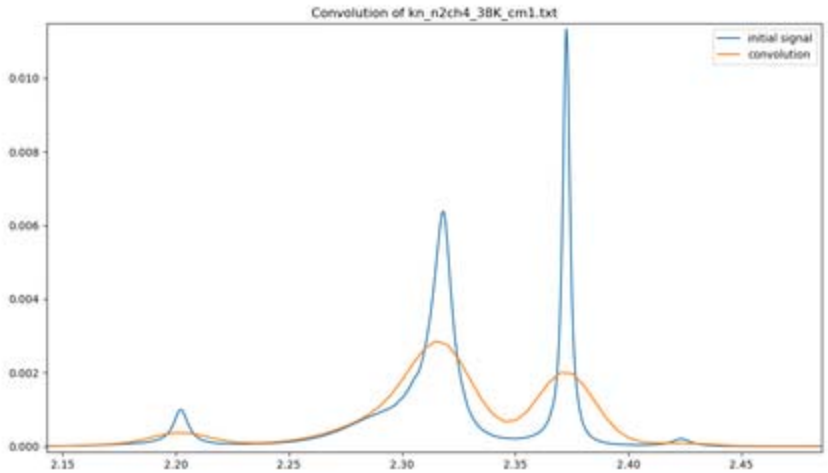
Dear SSHADE users,

Below is the **second SSHADE Users Newsletters** that first presents an efficient **spectral convolution tool**. It then present **4 new partners and their databases** and lists all the **new data imported in SSHADE during the last 3 months**.

Spectral convolution tool

- In addition to providing spectral data SSHADE, linked with the CSS facility (Cold Surface Spectroscopy Facility, a Europlanet Trans-National Access Facility) would like to provide the users with 'easy-to-use' and efficient **open tools for spectroscopy** (for solids, liquids but also gases).
- The first one that we are happy to release is a '**spectral convolution tool**' that allows to convolve a high resolution spectrum with a **specific convolution function** (Gaussian, triangle, trapeze) and a given width (+ top for trapeze) on a set of destination wavelengths. The original and convolved spectrum units can be either **cm^{-1}, µm, nm or Angstrom**.





- The stand-alone application is provided for **Windows, Mac and Linux** operating systems.
- The source **code in Python 3** can be found in its 'Spectro Convolution' GitHub repository. Its license is CC BY 4.0. This code can therefore be reused with only the attribution of the authors.
- Did not hesitate to give feedback and suggest possible improvement!

New partners and databases

- Four new partners have been trained in the last 6 months and are starting to feed their own databases:

- **Centre de Recherche Pétrographiques et Géochimiques** (CRPG) - CNRS / Univ. de Lorraine, OSU OTELo, Nancy, France - Database : **Mirabelle**
  - *Data:* VNIR (0.5-2.5 microns) properties of both sedimentary (e.g., evaporites) and magmatic natural, rock samples.
- **Planetary Sciences and Astrobiology**, Laboratory of Mineralogy, Petrology and Economic Geology - National Technical University of Athens (NTUA), Athens, Greece - Database : **phasma**
  - *Data:* Raman and FTIR spectra mainly acquired from Martian meteorites
- **Centre For Terrestrial and Planetary Exploration**, Winnipeg, Canada - Database : **CHIPS**
  - *Data:* reflectance, Raman and transmission (UV to NIR) of natural geological samples, field sites, meteorites and synthetic components.
- **Astrophysics Laboratory**, Dipartimento di Matematica e Fisica 'E. De Giorgi', Università del Salento, Lecce, Italy - Database : **PLUS**
  - *Data:* minerals of planetological and astrobiological interest measured with various spectroscopic techniques from the UV to Far-IR (transmission, directional-hemispherical reflectance, specular reflection, etc.)

- You can learn more about these new partners and their new databases (who are behind, which labs, which type of data they (will) provide, ...) by visiting the **'database page'** @ SSHADE Wiki.

* New data

- since 1st March 2021: 186 spectra

- Optical constants in the MIR and FIR for an oriented olivine crystal parallel to the three crystallographic axes (DOCCD)
- Optical constants of glassy SiS2 in MIR/FIR (DOCCD)
- Optical constants of Mg-Fe sulfides in MIR/FIR (DOCCD)
- Optical constants of amorphous aluminium oxide in MIR/FIR (DOCCD)
- Optical constants of nonstoichiometric spinels in MIR/FIR (DOCCD)
- Vis-IR reflectance spectra (i=0°, e=30°, az=0°) of bulk (powders or raw pieces) Martian meteorites (GhoSST)
- Vis-NIR reflectance spectra of a powdered and a cut section of NWA4766 (basaltic shergottite) at various observational geometries (GhoSST)
- Vis-NIR reflectance spectra of Huy pigments (PIG_0172_A): blocks, powders, plots and painted matters (PIG)
- Vis-NIR reflectance spectra of Beauregard pigments (PIG_0174_A): raw blocks, powders, polished plot and painted matter (PIG)
- Vis-NIR reflectance spectra of Pierrerue pigments (PIG_0176_A): raw blocks, powders, plots and painted matter (PIG)
- Vis-NIR reflectance spectra of Pierremorte pigments (PIG_0020_A and B): blocks, powders, polished plot and painted matters (PIG)
- Vis-NIR reflectance spectra of Bordezac pigments (Pig_0160_D): blocks, powders, plots and painted matters (PIG)
- Vis-NIR reflectance spectra of Roussillon pigments (PIG_0173_A): raw blocks, powders with different grain sizes and painted matter (PIG)
- Vis-NIR reflectance spectroscopy of the meteorite Murchison with varying incidence and emergence angles (CHIPS)
- Vis-NIR reflectance spectroscopy of the meteorite Murchison with varying grain sizes from 1000µm to 45µm (CHIPS)
- W L3 edge XAS transmission and XAS fluorescence of W reference compounds at 10K (FAME)
- Vis-NIR reflectance spectra of a mix of three PAHs, PAHs mixed with CO2 snow and PAHs mixed with JSC Mars-1 simulant (CSS)

Contact

- If you have questions on SSHADE or if you want us to deal with a specific topic in this Newsletter then do not hesitate to use the SSHADE contact mail : contact@sshade.eu

Bernard Schmitt and the SSHADE team

- You receive this User Newsletter as you are a registered user of SSHADE (www.sshade.eu). If you do not want to receive them, please just send me a mail (bernard.schmitt@univ-grenoble-alpes.fr) with subject 'unsubscribe Newsletter'.

*- All user newsletters will be stored in the dedicated **'News' page** of the SSHADE Wiki*

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Visit the SSHADE (www.sshade.eu) solid spectroscopy database infrastructure !

Apply for an experiment at CSS (https://cold-spectro.sshade.eu/), the Cold Surface Spectroscopy facility !