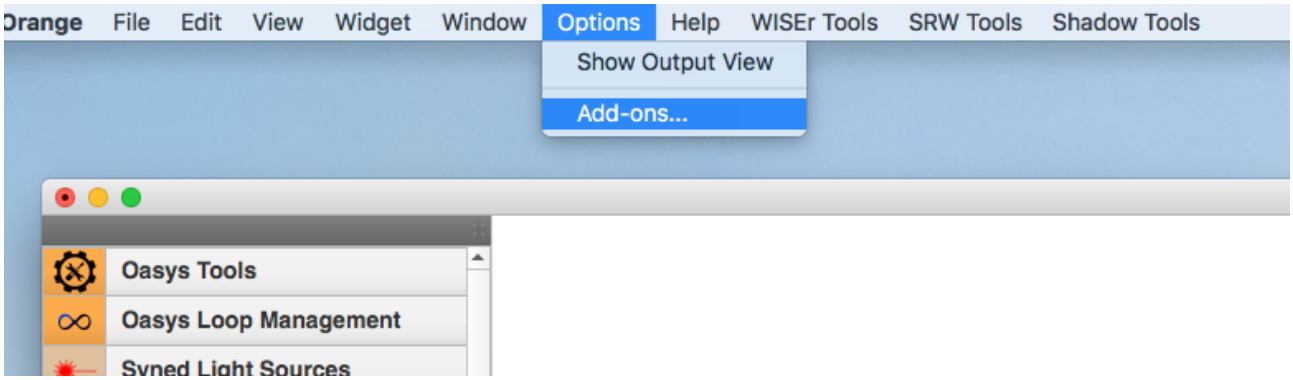
SYNchrotron Elements Dictionary (Syned)

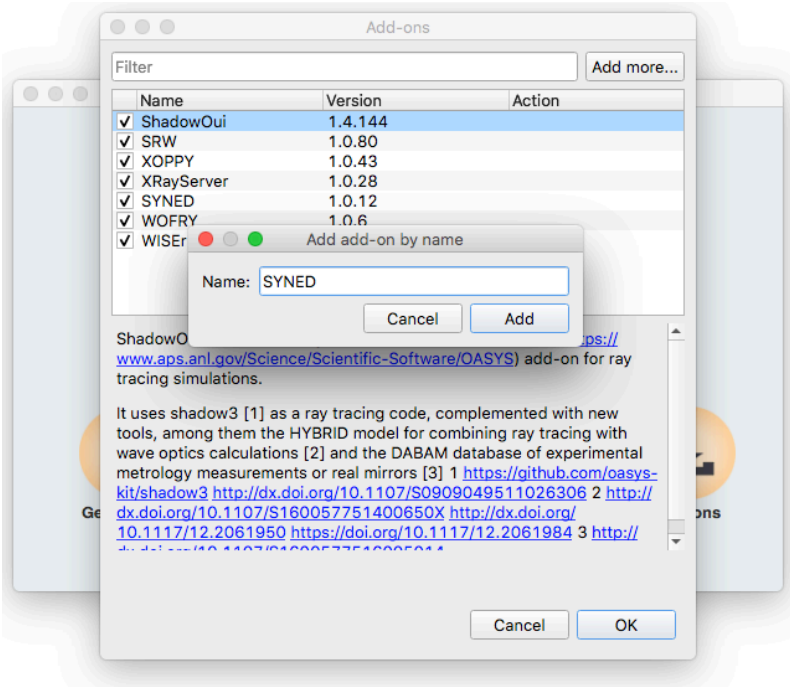
Syned is a powerful element of Oasys, allowing for writing, reading and distributing ("sending") data to different widgets (sources and optical elements) of different packages (Shadow, SRW, Xoppy, Wofry…). As such, it is not an active application, it simply writes and reads .json files, making the data non-modifiable by the widgets it is sent to, and shareable.
It can read files from a location in the hard drive, as well as from a remote folder. The latter option is being implemented for Elettra.

Installing Syned

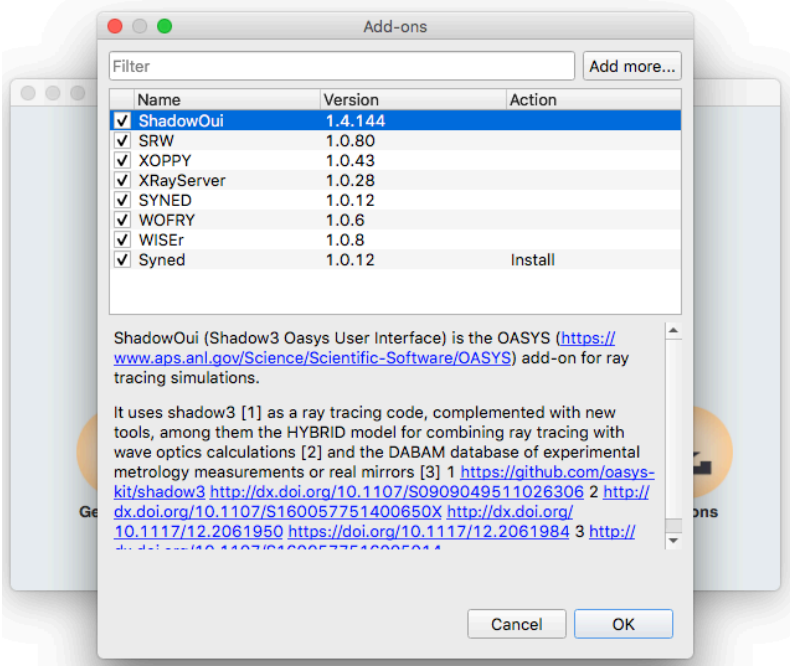
Open your version of Oasys1.1, go to the *Options* menu, and select *Add-ons*.



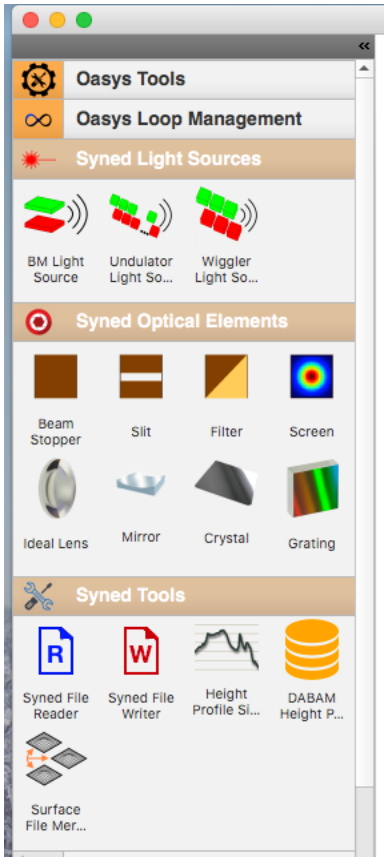
Click on the *Add more…* button and type SYNED in the pop-up box. This will add the package in your Add-ons list.



Tick the box next to the SYNED name, and then click the *OK* button to install the software in your Oasys1.1. You will have to restart Oasys1.1 in order for the changes to take effect.



Once that is done, your Oasys1.1 package should have the Syned extension installed, and should look as follows:

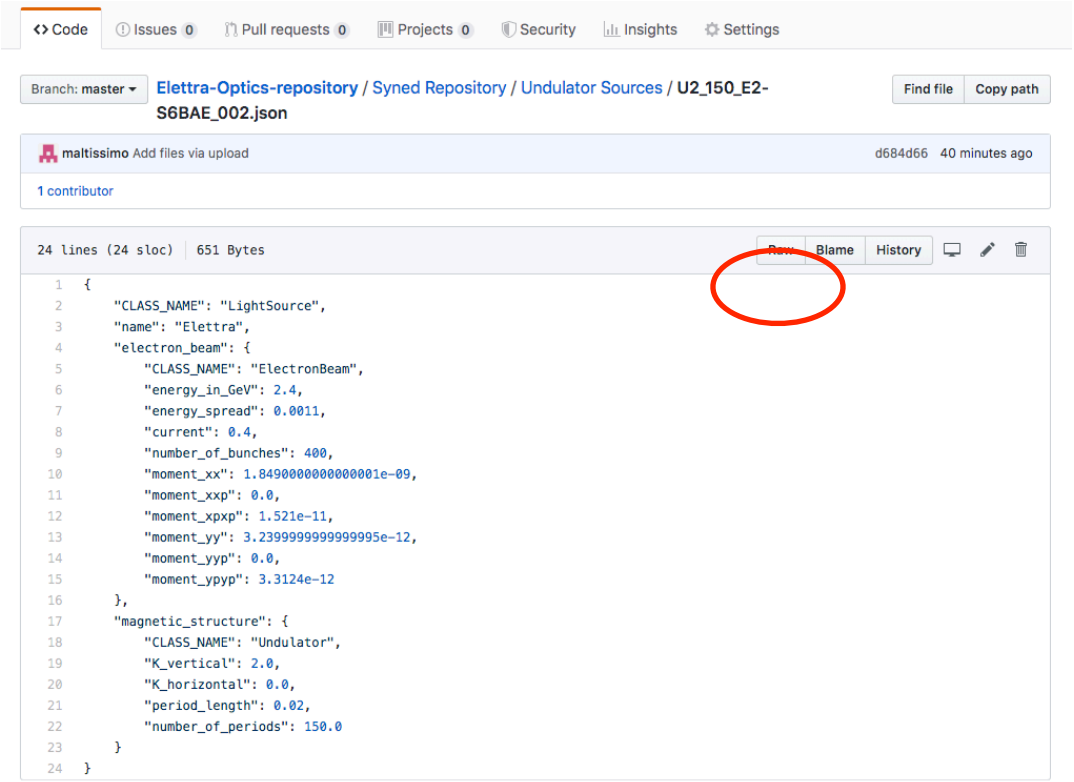


Usage of Syned

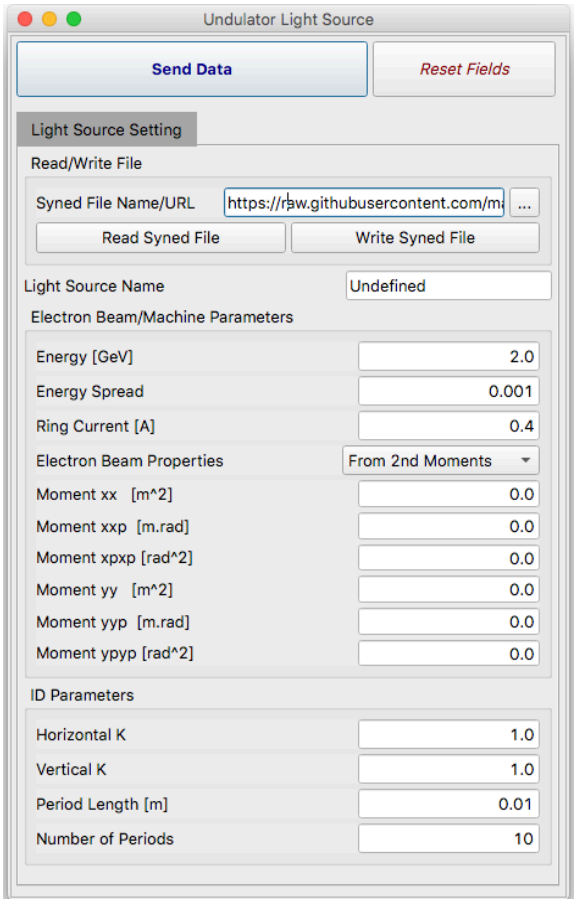
Syned reads the parameters of an element (i.e. a source, a mirror, a specific height profile), and sends the data to the widgets of different packages. The data is available at the following link:

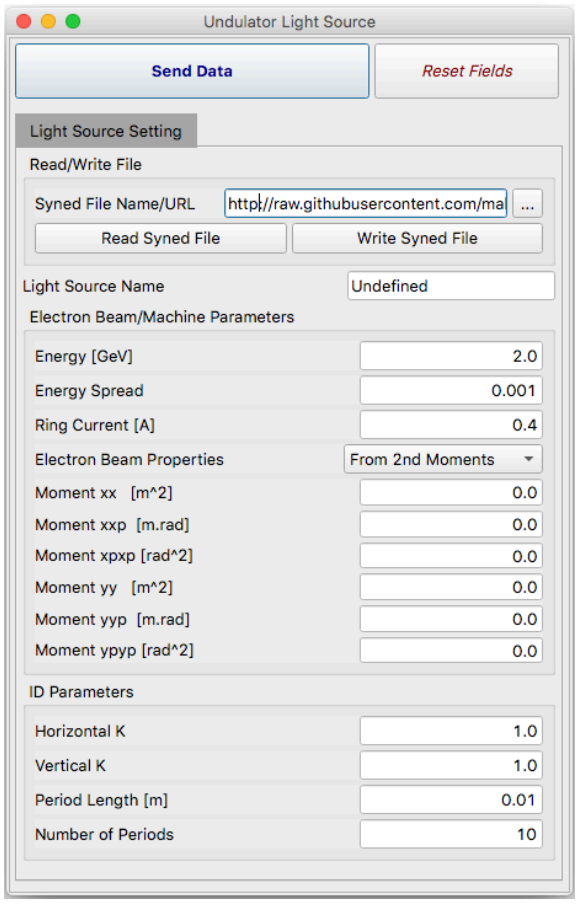
https://github.com/oasys-elettra-kit/Elettra-Optics-repository

First, drag a "Undulator Light Source" widget from "Syned Light Sources" into your Oasys canvas, and double click on it, to open the widget's parameters window. Open the link above in your favourite web browser, you should be directed to the Github page containing the undulator sources implemented this far. Log in if necessary, and also, make sure you read the naming convention file in that directory, in order to correctly choose your file. Then,click on the source you want to use, and open it. The page should look very similar to the following:

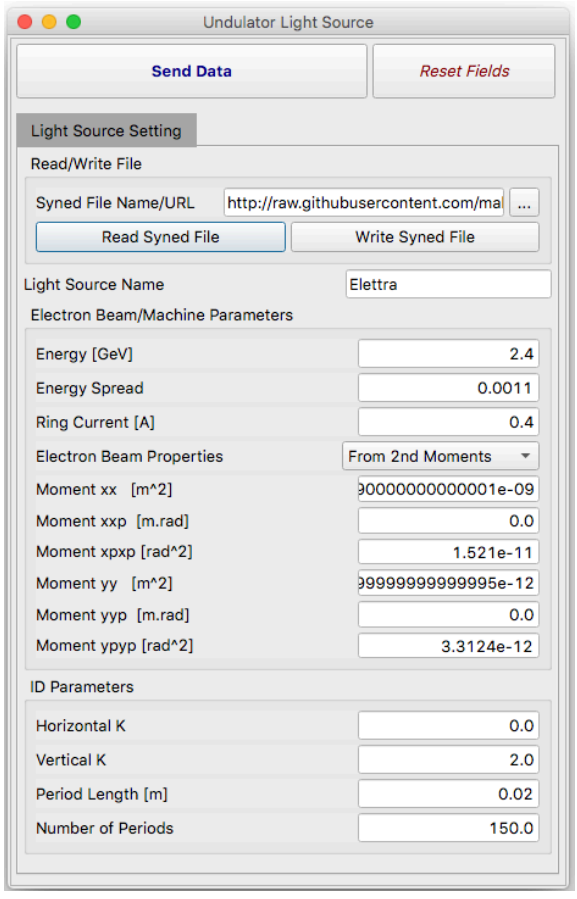


At the moment, Syned does not read the file directly from this link, due to some added padding in the webpage, and due to the "https" protocol.
To correctly read the file, click on the "Raw" button highlighted in the figure above, a page with a plain text file will open. Copy and paste the link into the Syned widget in Oasys, scroll back all the way into the path, and delete the "s" in the "https".
See the figure below.

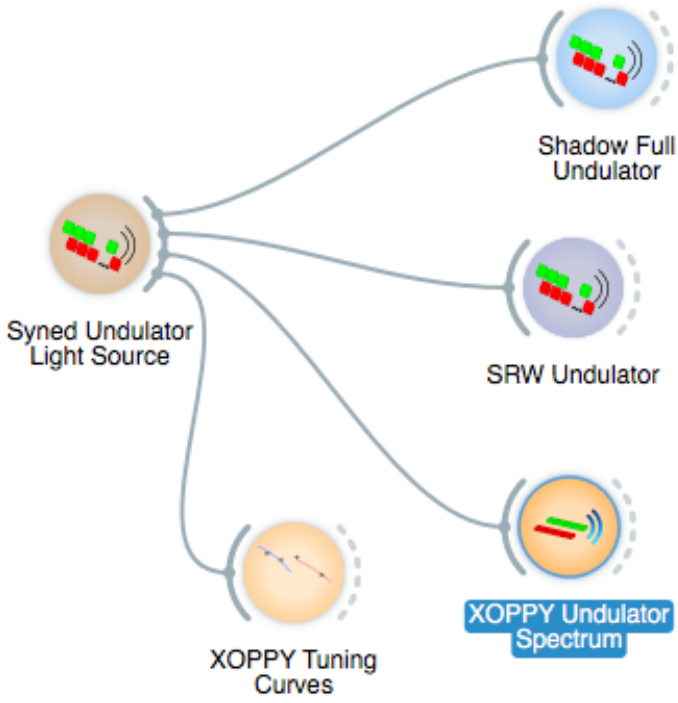




Note how the window on the right has the "s" deleted in the File Name/URL field. Then, click the "Read Syned File" button to load the parameters into the widget.



Now the data can be sent to all the corresponding Oasys widgets. As an example, see the image below, where a single Syned Undulator source provides the necessary source data to a Shadow Full Undulator, an SRW Undulator, a XOPPY Tuning Curves calculator, and a XOPPY Undulator Spectrum calculator.



The data is transmitted to the widgets by pressing the “Send Data” button.