## Creating experiment

- Select **New Experiment** in the top menu

- Enter descriptive name

e.g. *TZ123 WT vs PRR79 at long day*

- Purpose

*Testing periodic properties of the new LUC constructs in PRR79 after long day entrainment (18:6 LD)*

- Description

*Seedlings were grown under 24 light/dark cycles (18h of light and 6h of darkness), corresponding to physiological summer day lengths for 7 days. The entrained seedling were then moved into constant light conditions and their luminescence monitored with high sensitivity camera.*

*WildType and prr79 mutant were transformed with different LUC constructs driven by a clock gene promotor: LHY, TOC1, ZTL, PRR5, PRR7*

* Comments

*Fungus contamination on prr79 TOC1 line*

Press **Accept**

In the section bellow: **Biological details**, enter the species and data category (Expression reporter)

In the **Measurements details**, enter technical information

*Seedling were sprayed with luciferin on the last day of the entrainment. Exposition time 10 minutes with 2 hours interval between the pictures. Recorded pictures were analysed using Metamorph. The standard region grid was used instead of manually selecting regions for analysis.*

## Importing data

Get the data file from: <https://biordm.github.io/fair-in-circadian-practice/files/biodare-demo-wt_prr.xlsx>

Go to import data in the dashboard menu.

Select data file (demo-wt-prr.xslx) leave the default File Format as Excell.

Next, Describe data layout (data in columns, data labels are present, no background noise records)

Next, Define time column

In the snapshot of the data table click on the first cell containing the first timepoint (A5).

Change the unit, to image nr, set time interval to 2 hours.

Next, Import label from the correct row (4th)

Next, click on the first data column (there may be other columns between the time column and the measurements)

Press **Import data**

## Examine the plotting options (**Show data** and **Heatmap**).

## Period analysis

Define analysis parameters (data subset, detrending, analysis method and range of periods of interest.

Press **analyse**

The screen switches to the display of results of period analysis (almost instantaneously),

It shows box plots for period values by biological replicates.

If you see “X results needs attention” press Select Periods to see the results which were not included in the stats and why.

The phase plot has different view settings:

Phases by: FIT (by fitting a cos with the main period and using its peak time), by Method (as defined in original method), FIRST (by time of the first peak), Avg. (by the average times of all peaks). The parametes are describe under ? in the panel above.

There is a download icon on top to export all the results.

## Rhythmicity test

BioDare has implemented a classic JTK and eJTK methods for rhythmicity test of omics like data (short, infrequently sampled measurements).

To simulate such data, we will only analyse the last two days of data.

In the data window type 120 in from, leave to as 0 (which is the end).

Leave the rest of the preset and run the test.