# PQLX PDF & PSD Data Extract Scripts

## Introduction

In addition to PSD and PDF data visualization provided by the client GUI program pqlx, several scripts are available to allow for extraction of PSD and PDF data directly from a PQLX database.  This is provided to allow for the case when further analytical processing might be desired and where this requires raw data as opposed to a picture.

The following extract scripts are provided:

- **exFREQS –** returns a list of frequencies held in the database for a given channel

- **exPDFhour** – extract the PDF for the given channel and bounding parameters: month range, start and stop times

- **exPDFfreq** – extract the PDF for the given channel and bounding parameters: date range, frequency and power

- **exPSDhour** – extract the PSDs for the given channel and bounding parameters: date range, start and stop times

- **exPDFstat –** extract the requested statistics from the database for a given channel and System PDF.

## exFREQS

Returns a list of frequencies held in the database for a given channel.  Output written to stdout.

Usage:

```
exFREQS [HOST:]DBName NTW STN LOC CHN
```

## exPDFhour

Returns the PDF for the given channel and bounding parameters.
Output Format: **Frequency Power number_of_hits**

Usage:

```
exPDFhour [HOST:]DBName NTW STN LOC CHN \
          start_MONTH end_MONTH start_HOUR end_HOUR [--PNG]
```

Examples:

```
bash> exPDFhour dbName IU ANMO -- BHE 1 1 02:00 14:00

bash> exPDFhour dbName IU ANMO -- BHE 1 12 00:00 24:00
```

Extract to **pqlxPNG** example:

--PNG option indicates that output should be made in a format intended as input to **pqlxPNG** plotting program.

This output can be piped to **pqlxPNG** as:

```
bash> exPDFhour ... -PNG | pqlxPNG --inputPDF --pngName=name --pngDir=/tmp
```

See **pqlxPNG** for a complete list of possible options to **pqlxPNG**.

## exPDFfreq

Returns the PDF for the given channel and bounding parameters
Output Format: **Frequency Power number_of_hits**

Usage:

```
exPDFfreq exPDFfreq [HOST:]DBName NTW STN LOC CHN \
        Start_DATE End_DATE Start_FREQ End_FREQ Min_POWER Max_POWER [-PNG]
```

Example:
```
bash> exPDFfreq micros IU ANMO -- BHE 2003-04-03 2004-05-03 8.0 8.5 -180 -60
```

Extract to **pqlxPNG** is same as for **exPDFhour.**

## exPSDhour
Usage
```
exPSDhour DBName NTW STN LOC CHN Start_DATE End_DATE Start_TIME End_TIME
```

Example:
```
bash> exPSDhour micros IU ANMO -- BHE 2003-04-03 2004-05-03 02:00 14:00
```

returns the PSD's for the given channel and bounding parameters
format: DATE HOUR Frequency Power

## exPDFstat
Usage:
```
exPDFstat [HOST:]DBName [PDFLIST | PDF# NTW STN LOC CHN stat1 [stat2 ...]]
```

Example 1:

```
bash>  exPDFstat micros PDFLIST
```

List PDF Number Specification and All Possible Statistics

Example 2:

```
bash>  exPDFstat micros 1 IU ANMO -- BHE 10 90 mode
```

Output PDF statistics of PDF #1 for 10th and 90th Percentiles and Mode

Output file is named NTW.STN.LOC.CHN.**PDF#**.**statname**.stat
  where:

   **PDF#** – is the PDF Number specified on the command line
   **statname** – *is* the Statistic Identifier

  and is written to Current Working Directory