📚Step-by-Step Tutorial for Installing and Using BRKRAW on Windows

🛠️1. Installing BRKRAW on Windows (CMD or PowerShell)

1.1 Prerequisites

Before installing BRKRAW, ensure you have:

- **Windows 10 or newer**
- **Python 3.6 or 3.7** (Download from python.org or use Anaconda).
- **pip** installed (automatically installed with Python).

To verify Python and pip installations, open CMD or PowerShell and run:

```
python --version
pip --version
```

If you see version numbers, you are good to proceed.

1.2 Step-by-step Installation

1. Open **CMD or PowerShell** as an administrator (right-click → run as administrator).

2. Run the following command to install BRKRAW from PyPI:

```
pip install bruker
```

1. For additional support (recommended), install with:

```
pip install "bruker[SimpleITK]"
```

1. (Optional) To install the latest version from GitHub:

```
pip install git+https://github.com/brkraw/bruker
```

1.3 Verifying Installation

To ensure BRKRAW was installed successfully, run:

```
brkraw --version
```

If a version number appears, installation was successful.

Optionally, you can launch the graphical interface with:

```
brkraw gui
```

📂2. Creating and Editing the BIDS Template (.xlsx)

2.1 Creating the Template

1. Place your Bruker data in a specific folder, for example:

```
C:\bruker_data\
```

1. Open CMD or PowerShell and run:

```
brkraw bids_helper C:\bruker_data\ dataset_template -j
```

This command generates two files in your folder:

- `dataset_template.xlsx` (for editing in Excel)
- `dataset_template.json` (for metadata)

2.2 Editing the Template (.xlsx)

1. Open `dataset_template.xlsx` in Excel.

2. Carefully complete the required columns, for example:

folder	modality	task	acq
acqp1	bold	resting	echo-1
acqp2	T1w		

- **folder**: Original Bruker folder names.
- **modality**: Type of images (bold, T1w, T2w).
- **task**: Only required for functional images (e.g., resting).

- **acq**: Optional additional parameters according to your experiment.

- Save the changes before closing Excel.

🕐3. Converting Data to BIDS Format Using the Template

3.1 Executing the Full Conversion

In CMD or PowerShell run:

```
brkraw bids_convert C:\bruker_data\ dataset_template.xlsx -j
dataset_template.json -o C:\output_BIDS\
```

This command:

- Converts original data into NIfTI format.
- Automatically generates the BIDS structure in the output folder.

3.2 Final Review

Check the content in the `C:\output_BIDS\` folder. The typical structure should look like:

```
C:\output_BIDS\
├─ sub-01\
│  ├─ func\
│  │  ├─ sub-01_task-resting_bold.nii.gz
│  │  └─ sub-01_task-resting_bold.json
│  └─ anat\
│     ├─ sub-01_T1w.nii.gz
│     └─ sub-01_T1w.json
```

3.3 Validation

To ensure everything was generated correctly, validate your dataset using the BIDS Validator.

🔗4. Additional Tips for Beginners

- **Always run CMD or PowerShell as an Administrator**.
- Basic navigation commands:

```
cd C:\bruker_data\  # Enter the directory
dir                 # View directory content
```

- Always use the **BIDS Validator** to confirm correct organization.

You're now set! Your data is organized and ready for analysis using BRKRAW in BIDS format.