What is this repository for?

Lake Level is a set of codes run in R programming language and Jupyter Notebook computing platform to analyze Lake Chad’s remote sensing and ground-truth lake levels.

The R file is used for correlation and cross-correlation analyses.

The Jupyter Notebook link is for:

* Descriptive statistics exploratory data analysis
* Scaling and Variance Inflation Factor analysis
* Machine learning algorithms analysis and comparison

### How do I get set up?

### Using R programming language. You need to install R in your computer

1. Download the Lake.csv dataset and the LLmodels\_r R file onto a folder
2. Launch R
3. Open the downloaded LLmodels\_r R file. The data is read as lake = read.csv('E:\\Lake Level\\Lake.csv', header = TRUE)
4. Change the directory **'E:\\Lake Level\\** to your own directory where you have saved the dataset and the R file (step a)
5. Run the codes after installing the packages and running the libraries
6. Using Jupyter Notebook

* Open this [LLmodels\_revised - Jupyter Notebook](http://localhost:8888/notebooks/LLmodels_revised.ipynb) in your browser
* Change the directory of lake = pd.read\_csv(**'E:\\Lake Level**\\Lake.csv') to the directory where you have saved the Lake.csv dataset (step 1.a)
* Run the codes to get the results

### Who do I talk to?

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### License

These codes are developed using a free software (R) and a web-based interactive platform (Jupyter Notebook). Their first versions have an article preprinted by EGUsphere (https://egusphere.copernicus.org/preprints/2022/egusphere-2022-427/) with a Digital Object Identifier https://doi.org/10.5194/egusphere-2022-427.