Tutorial:

Data Assimilation (DA) & the EnKF

by patrick.n.raanes@gmail.com

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Languages: English/French. **Python.**

Format:

- Interactive (Jupyter) and programming **exercises,**
- accompanied by some **theoretical notes.**
- Work **in pairs** if you want.

Duration:

- 40 min/tutorial of **individual work**
  (I will circulate to assist).
- +15 min of **summary and discussions.**

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Schedule: 10-12am; Tuesday, Wednesday, Thursday.

Goal for **week 1 & 2**: Understand & implement the **EnKF** (ensemble Kalman filter).

Goal for **week 3**: Custom (iEnKS, Particle filter, etc.).

Level: noob -> intermediate

Name	Background	Favourite scientist	Desired DA topics
	Modeller		
	DA MERCATOR	Julien	
	DA	Mathieu	
	One course		
	Ocean Modelling	Newton	
	Lagrangian An.	Lagrange	
	Operational DA MO.		
	DA SEEK	Myself	
	Modeller		
	DA	Giovanni	
	10 years DA (KF + Var)	Gauss	Iterative, 4D localization, inflation
	Modeller Physics	Lorenz	
	Modeller Ocean	Wunch	
	Internship	Neumann	

Objectives for 1st hour:

1. Install DAPPER.
   On your own computer (Mac/Windows/Linux).
   Follow instructions at
   `github.com/nansencenter/DAPPER#installation`

If you don't have much experience with Python: **use Anaconda**.

Installers available on **USB keys** distributed by Giovanni; click
- "Yes" for the "**path**" adjustment option.
- "No" to Visual Studio.

Test (should print [...]/anaconda**3**/bin/python") using:

```
(bash)$ which python
```
(use `where` on Windows)

2. Launch Jupyter:

```
(bash)$ cd [...]/DAPPER
(bash)$ jupyter-notebook
```
(or DAPPER-master)
(opens in firefox/chrome)

3. Open DAPPER/tutorials/T1 within Jupyter's browser, and start going through! Good luck!