

# Training Course Using FLR and a4a for Quantitative Fisheries Advice



FISHREG  
Maritime Affairs Unit - IPSC  
European Commission  
Joint Research Center

## Welcome to the EC JRC, Ispra, Italy.



## AGENDA

- TIMETABLE: 9.00 - 12.30 / 14.00 - 17.30
- BREAKS @ 10.30 / 15.30

# LOGISTICS

## Lunch

- JRC Mensa

## Dinner

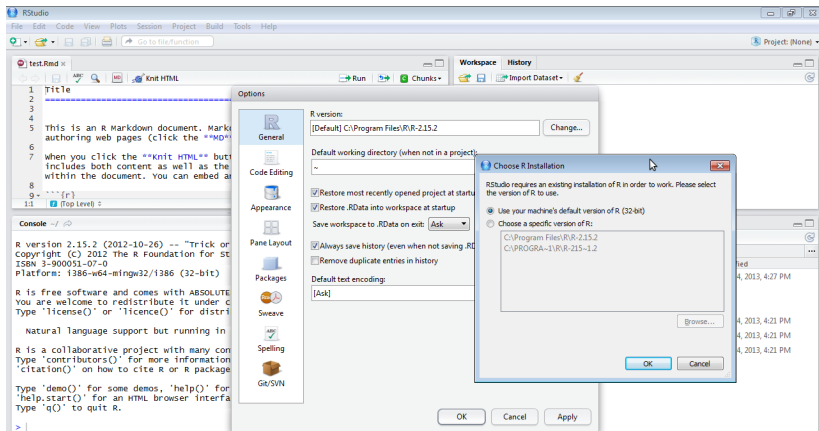
- Hotel Europa
- Other places in Ispra
- Course dinner THU

## MATERIALS

- R 3.1: <http://cran.r-project.org/>
- RStudio: <http://rstudio.org/>
- git: <http://msysgit.github.io/>

# INSTALLATION

## Select 32 bit R



## INSTALLATION: packages

```
install.packages("")
```

- copula
- triangle
- mgcv
- splines
- plyr
- ggplot2
- knitr

## INSTALLATION: packages

```
install.packages(repos="http://flr-project.org/R")
```

- FLCore
- FLEDA
- FLash
- ggplotFL
- FLBRP
- FLa4a



## OUTLINE

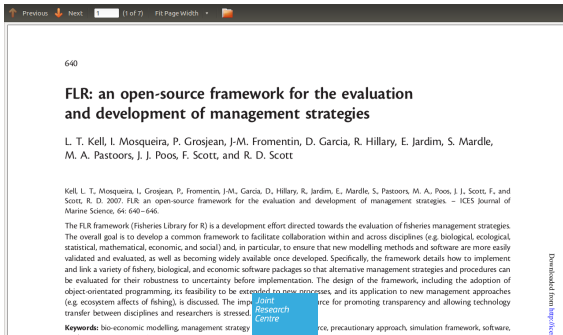
1. Introduction to FLR
2. Loading data, plotting and EDA
3. Non-linear modelling
4. Stock assessment using a4a (I)
5. Stock assessment using a4a (II)
6. Reference points
7. Short and medium term forecasting for advice
8. From stock assessment to MSE

## HOW WILL IT RUN

- Presentations
- Tutorials
- Exercises
- Paper of the day

## Today's paper

Kell, L. T., Mosqueira, I., Grosjean, P., Fromentin, J-M., Garcia, D., Hillary, R., Jardim, E., Mardle, S., Pastoors, M. A., Poos, J. J., Scott, F., and Scott, R. D. 2007. FLR: an open-source framework for the evaluation and development of management strategies. – *ICES Journal of Marine Science*, 64: 640–646.



## LICENSE

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## ABOUT US

Ernesto Jardim - STECF, MPs, a4a

Iago Mosqueira - FLR, IOTC, MPs

Finlay Scott - BioEco, FLR

Nekane Alzorriz - BioEco, BoB

# READY !!

'Men learn while they teach.'

Seneca the Younger