

Estimator explained

Course on Management Strategies Evaluation with FLR and a4a
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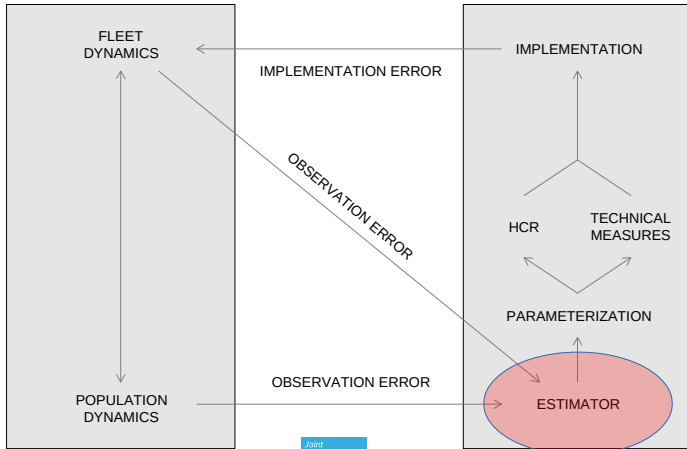
Joint Research Centre
European Commission

source: https://en.wikipedia.org/wiki/Gilt-head_bream

Estimator function

- ▶ Estimates quantities/statistics of interest for management.
 - ▶ data rich: use stock assessment models to estimate stock status, reference points and future fishing opportunities,
 - ▶ data limited: use model to compute indicators which (hopefully) can be used to steer the fishery away from crashing the stock.
- ▶ Filter/translated between the data and decision process.

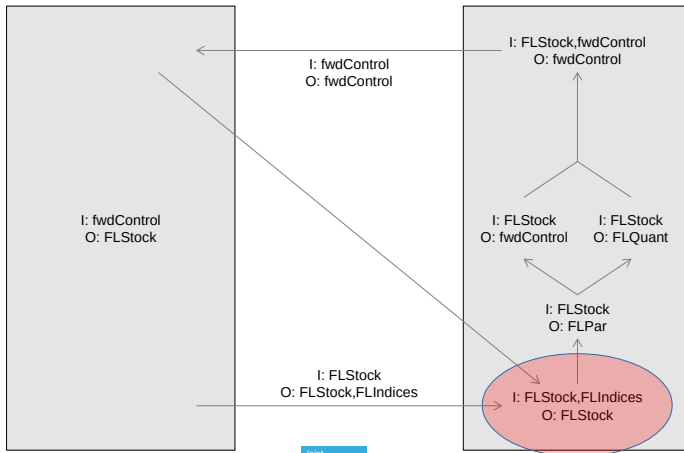
Estimator within MSE cycle



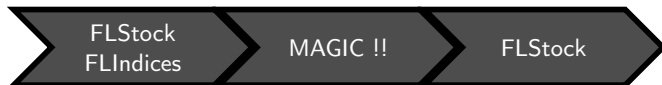
Estimator within MSE cycle



Estimator API



Estimator API



Note the tracking matrix and generics arguments are always passed. If not explicitly it'll be in the '...'.

Coding an estimator

```
my.est <- function(stk, idx, args, tracking, ...) {  
  
  # code that runs a stock assessment, creates a new stock object with the  
  # estimations and updates the tracking matrix  
  
  # output must have a stock object  
  list(stk = stk.est, tracking = tracking)  
}
```

Coding the a4a sca estimator

```
sca.sa <- function(stk, idx, args, update = TRUE, dfm = c(0.75, 0.75), ...) {  
  sa_args <- list(...)  
  if (update)  
    sa_args$fmodel <- defaultFmod(stk, dfm = dfm)  
  sa_args$stock <- stk  
  sa_args$indices <- idx  
  if (is.null(sa_args$fit))  
    sa_args$fit <- "MP"  
  tracking <- sa_args$tracking  
  sa_args$tracking <- NULL  
  fit <- do.call("sca", args0)  
  stk <- stk + fit  
  tracking["conv.est", ac(range(stk)["maxyear"] + 1)] <- fit@fitSumm["maxgrad",  
    ]  
  list(stk = stk, tracking = tracking)  
}
```


Next

Hands-on !