



# Model Performance

```
#' cper
#'
#' Compute a performance measure (0-1) between observation and model
#' based on both NSE and relative error
#' @param m model estimates
#' @param o observations
#' @param weight.nse weighting to give NSE metric
#' @param weight.relerr weighting to give relative error metric
#' @return combined 0-1 performance measure

cper = function(m,o,weight.nse=0.5, weight.relerr=0.5) {

  nse = nse(m,o)
  mnse = max(nse,0)

  rel.err = relerr(m,o)
  merr = 1.0-min(1.0, abs(rel.err)/max(abs(rel.err)))

  combined = weight.nse*mnse + weight.relerr*merr

  return(combined)

}
```

# Calibration-Optimization

- choosing parameter sets to use based on comparison with observed data
- calibration is very similar to sensitivity analysis
  - we could use LHS or SOBEL function to generate parameter sets and model runs
  - compute performance metrics for each run
  - graph and decide on a ‘cut off point’ of ‘acceptable parameters
- optimization
  - a way to to calibration - search procedure