Interactive comment on "A methodology to estimate flow duration curves at partially ungauged basins" *by* Elena Ridolfi et al.

F. Serinaldi

francesco.serinaldi@ncl.ac.uk

This is just an update of the code including correlation. In the previous version I forgot to correlate x and y in the target period. Sorry!

```
# with perturbation and some cross-correlation
xa.r = rnorm(365*20)+rep(rnorm(20,sd=0.4),each=365)
yb.r = rlnorm(365*20)*rep(rlnorm(20,sd=0.6),each=365)
rho = 0.2
corM <- rbind(c(1.0, rho), c(rho, 1.0))
```

```
SigmaEV <- eigen(corM)
Meps <- rbind(xa.r,log(yb.r))
Meps <- SigmaEV$vectors %*% diag(sqrt(SigmaEV$values)) %*% Meps
Meps <- t(Meps)
#plot(Meps)
xa.r = Meps[,1]
yb.r = exp(Meps[,2])
plot(xa.r,yb.r)
xa.t = rnorm(365)
#############
yb.t.obs = rlnorm(365)
Meps2 <- rbind(xa.t,log(yb.t.obs))
Meps2 <- SigmaEV$vectors %*% diag(sqrt(SigmaEV$values)) %*% Meps2
Meps2 <- t(Meps2)
#plot(Meps2)
xa.t = Meps2[,1]
yb.t.obs = exp(Meps2[,2])
yb.t.sim = approx(x = sort(xa.r), y = sort(yb.r), xout = sort(xa.t))$y
plot(1-ppoints(365,0),sort(yb.t.obs) , type="l", log="y")
lines(1-ppoints(365,0), yb.t.sim ,col=2)
```

C3