Supplementary Material

Appendix 1 - Syntax to facilitate the determination of initial values of a nonlinear function and the statistical significance of estimated parameters, based on the GenSA package in R.

```
f=function(par){
  phi1=par[1]
  phi2=par[2]
  phi3=par[3]
  sigma=par[4]
  eps=y-(phi1*exp(-exp(phi2-phi3*x)))
  f=1/(sqrt(2*pi)*sigma)*exp(-1/2*(eps^2/sigma^2))
  return(f)
}
logl=function(par){
    f1=-sum(log(f(par)))
  return(f1)
}
init=c(0,0,0,0)
f2=GenSA(par=init, fn=logl,lower=c(-Inf,-Inf,-Inf,0),upper=c(Inf,Inf,Inf,10))
ini1=f2$par
f1=optim(par=ini1,fn=logl,method="Nelder-Mead",hessian=T)
f1$par
hess=f1$hessian
sd=sqrt(diag(solve(hess)))
f1$par/sd
```