

```

%-----
%---R code for calculating the goodness-of-fit measures
%-----
data=c(0.054, 0.064, 0.704, 0.816, 0.235, 0.976, 0.865, 0.364, 0.479, 0.568,
0.352, 0.978, 0.787, 0.976, 0.087, 0.548, 0.796, 0.458, 0.087, 0.437, 0.421,
1.978, 1.756, 2.089, 2.643, 2.869, 3.867, 3.890, 3.543, 3.079, 3.646, 3.348,
4.093, 4.092, 4.190, 4.237, 5.028, 5.083, 6.174, 6.743, 7.274, 7.058, 8.273,
9.324, 10.827, 11.282, 13.324, 14.278, 15.287, 16.978, 17.209, 19.092, 20.083)
%-----
%--- PDF
%-----
pdf_model <- function(par,x)
{
eta1= par[1]
eta2= par[2]
kappa1= par[3]
kappa2= par[4]

(2/(pi))*(eta1*kappa1*(x^(eta1-1))+(eta2*kappa2/x^(eta2+1)))
*exp((kappa1*x^eta1)-(kappa2/x^eta2))*(exp(-exp((kappa1*x^eta1)-(kappa2/x^eta2))))
*(1/((1-((1-exp(-exp((kappa1*x^eta1)-(kappa2/x^eta2))))^2))^(1/2)))
}
%-----
%--- CDF
%-----
cdf_model <- function(par,x)
{
eta1= par[1]
eta2= par[2]
kappa1= par[3]
kappa2= par[4]
(2/pi)*asin(1-exp(-exp((kappa1*x^eta1)-(kappa2/x^eta2))))
}
set.seed(0)
goodness.fit(pdf=pdf_model, cdf=cdf_model,
starts = c(0.5,0.5,0.5,0.5), data = data,
method="S", domain=c(0,Inf),mle=NULL)

```