**Datasort:**

Sort data and store into structures for convenience and generate scatter diagram from 10 years’ raw data;

**Site 14 – this is the main script.**

1. Marginal distribution of wind speed (Weibull)

Fit wind speed data with 2 parameter weibull distribution and get shape and scale parameters; We get f(U)

1. Maginal distribution of Hs (Lognormal-Weibull(tail)) : **‘ lonowei’** f(Hs)
2. Conditional distribution of Hs for given wind speed U (Weibull)

Fit Hs data of each wind speed class U with 2 parameter weibull distribution, get shape and scale parameters;

Then fit Weibull parameters as a function of wind speed; so we could get f(Hs|U);

1. Conditional distribution of Tp|Hs

Fit Tp data of each Hs class with Lognormal distribution, get Lognormal parameters;

Then fit these parameters as a function of Hs; so we could get f(Tp|Hs);

Functions from WAFO:

empdistr: Computes and plots the empirical CDF

wweibplot: Plots data on a Weibull distribution paper

**contour\_2D\_U\_Hs; contour\_2D\_Hs\_Tp; contour\_3D;**

Use contour line method to get the 2D contour line of (Uw,Hs) and (Hs, Tp), and 3D contour surface of (Tp, Hs, Uw);

NB:

The initial values for nonlinear fittings may not always be reasonable; Should choose good values to obtain the right fitting parameters.

Control the tail of Tp\_sigma2\_fitting, the variance of Tp should never be negative;

Control the intersection point of Tp\_mu\_fitting, the value should never be negative;