

注意:

1 目前软件支持两个拟合参数服从多种边缘分布、考虑恒载与活载不确定性时的可靠度指标计算及图形绘制

2 静载试验数据的输入采用了\*.qpss 文件或者\*.txt 文件格式, 采用 Notepad 或任意文本编辑器均可打开。

有问题, 写邮件给我 [xingzhengwu@gmail.com](mailto:xingzhengwu@gmail.com) 或 [2231020028@qq.com](mailto:2231020028@qq.com).

基于 R 语言采用荷载-位移曲线预测基桩几何可靠指标的集成工具, PileBetaGR, 简单易用, 且有详细的'03 用户手册 04.pdf'文件供大家查阅, 这里仅给大家说明一下如何使用自行读入数据进行计算分析。

## 1 Step 1 检测数据集

打开

<https://xingzhengwu.shinyapps.io/PileBetaGR/>

PileBetaGR4.3.2: Geometric reliability analysis for piles !

Demo YourInput 3D 4D

Choose a Figshare File:

7215 Case CFAP Mihalik etal 2023

Refresh plot Download data

The data is sourced from two publications (772) <https://doi.org/10.1680/jgeen.20.00204> and (9368) <https://doi.org/10.1061/JGNAL.GMENG-8372>

These files (\*.qpss) can be downloaded by (772) <https://doi.org/10.6084/m9.figshare.25556721> and (9368) <https://doi.org/10.6084/m9.figshare.25855843>

Pearson's Rho only works with the BetaPlot option selected

Correlation Coefficient:

-0.8 -0.7 -0.6 -0.5 -0.4 -0.3 -0.2 -0.1 0 0.1 0.2

Optimization Solver:

Extended coefficient method (ECM)

Interval bisection method (IBM)

Sequential quadratic programming method (SQP)

Note: normal distribution of p1 and p2 is assumed;  
Developed by Dr xingzhengwu@163.com

这时可选中任意一个数据集, 点击 Refresh plot 即可展示荷载-位移曲线图形。然后, 可选中 Download data 去下载数据, 以为后继分析准备数据集。这些数据集也可以通过以下链接下载。

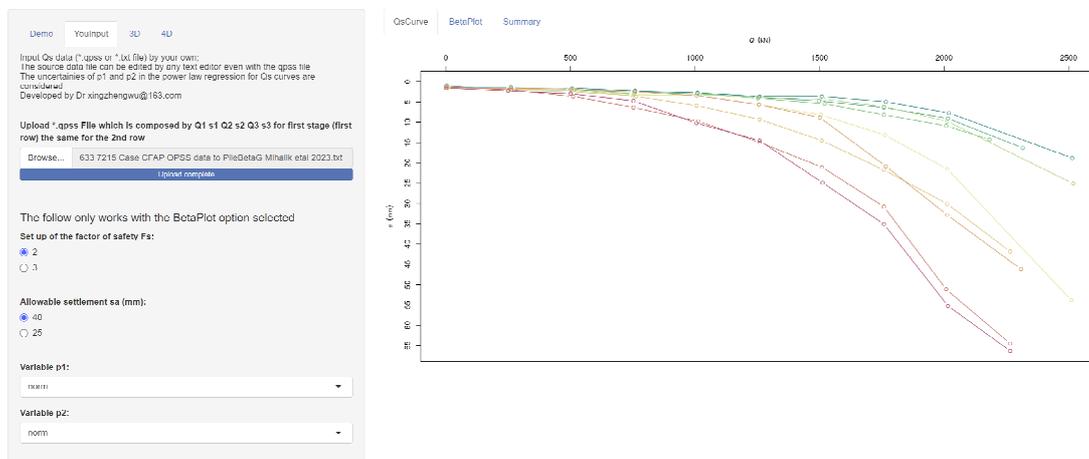
<https://doi.org/10.6084/m9.figshare.25556721>

或

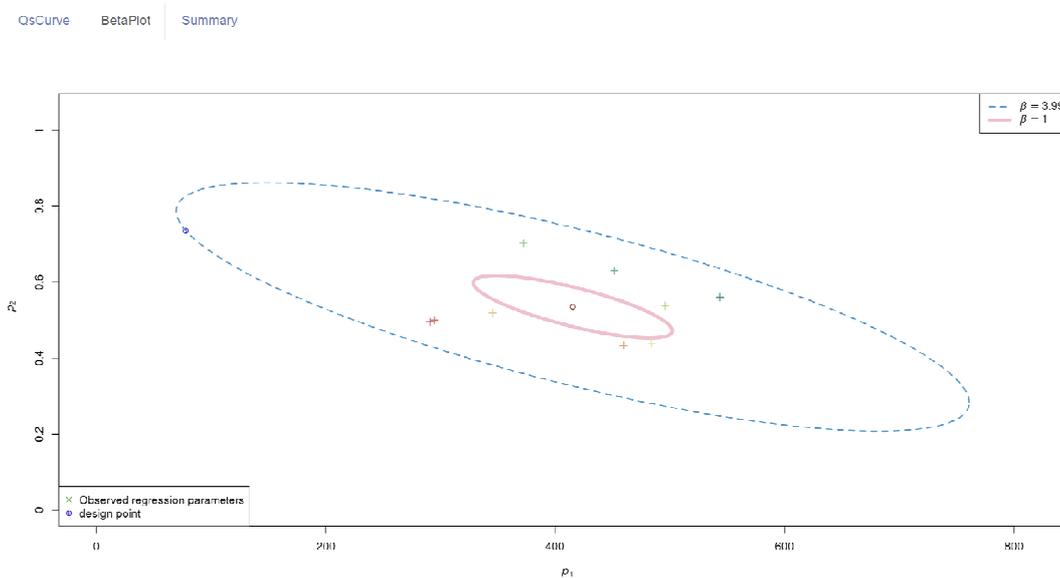
<https://doi.org/10.6084/m9.figshare.25855843>

## 2 Step 2 点击 YouInput 选项卡

点击 **Browse** 可以选中刚才下载的数据集，当然若有自己需要分析的数据集可以尝试。

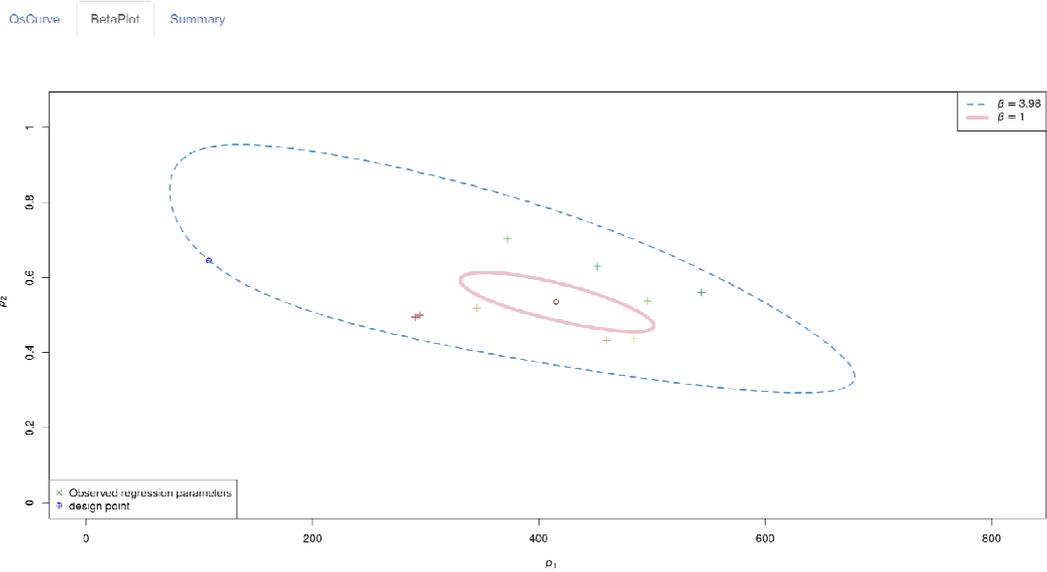


然后软件在网页右侧会展示荷载位移曲线，可选中 **BetaPlot** 选项卡，即可得到几何可靠指标以及概率密度等值线，同时图中给出回归参数值。Summary 选项卡下列示具体的荷载位移数据。



### 3 Step 3 其它情况

若需要改变安全系数的取值，或者变动边缘分布的类型，直接选择后系统会更新显示。  
3D 与 4D 下的分析与此类似，请自行尝试。



Demo YouInput 3D 4D

Considering another random variable (dead load).  
The theory can be referred to <http://www.ijer.org/10.1960/ijer.20.00204>.  
Developed by Dr.xingzhengwu@163.com

Upload \*.npz File which is composed by Q1 x1 Q2 x2 Q3 x3 for first stage (first row) the same for the 2nd row

Brwse... 633 7215 Case: CFAP QP3S Data for PileBataG Miliatik etal 2023.txt

Upload complete

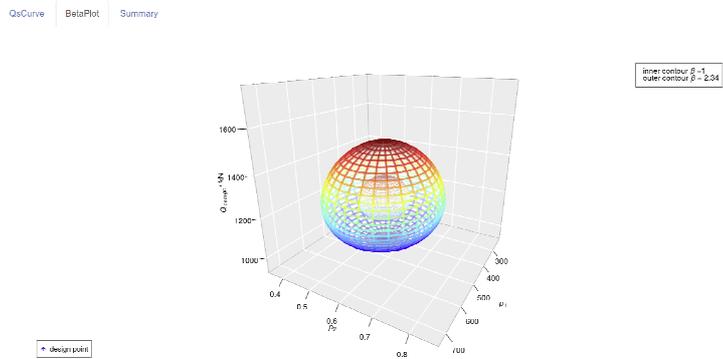
The follow only works with the BetaPlot option selected

Length out:

Variable p1: norm

Variable p2: norm

Dead load: Qdead/Qmax = 0.5



20250422