

NPRegfast: un paquete de R para analizar interacciones factor por curva

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III Jornadas de Usuarios de R
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La Voz de Galicia.es
MARÍNIMA
El buen tiempo y el tamaño del percebe tiran a la baja su precio
Los productores aprovechan un mes flojo para preparar la producción que se estrazará en verano
En algunos establecimientos comerciales el crustáceo puede encontrarse a 17 euros el kilo

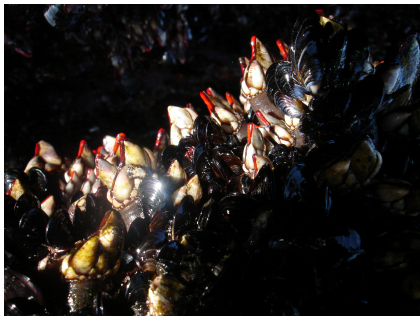
La Voz de Galicia.es
CARRALLO
Cierran la extracción de percebe en la zona de Corrubedo debido a la escasez de crustáceo

La Voz de Galicia.es
BARBANZA
La escasez del recurso marcará la campaña del percebe en Aguíño

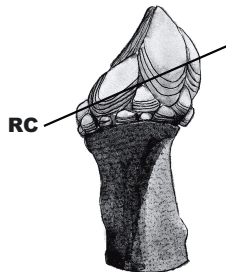
La Voz de Galicia.es
CARRALLO
La venta de percebes en la zona se ha reducido más de un 30% en un año



- 5 localidades litoral atlántico gallego
- 2 años de estudio



- Longitud rostro-carenal (RC)
- Peso seco (DW)



R version 2.9.2 (2009-08-24)

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Escriba 'demo()' para demostraciones, 'help()' para el sistema on-line de ayuda,

o 'help.start()' para abrir el sistema de ayuda HTML con su navegador.

Escriba 'q()' para salir de R.

[R.app GUI 1.29 (5464) i386-apple-darwin8.11.1]

```
> library(NPRegfast)
```

```
> ?NPRegfast
```

```
>
```

Nonparametric estimation for analyzing interactions factor-by-curve



Documentation for package 'NPRegfast' version 1.0

Help Pages

| | |
|-----------------------------------|--|
| NPRegfast-package | Nonparametric estimation by using local linear kernel smoothers. |
| contrast | Bootstrap based test for testing a parametric allometric model. |
| frfast | Fitting nonparametric models. |
| maxp | Maximum points for the estimate, first and second derivative, with their 95% confidence intervals. |
| maxp.diff | Differences between the estimation of maximum points for factor's levels. |
| NPRegfast | Nonparametric estimation by using local linear kernel smoothers. |
| plot.diff | Visualization of the differences between the estimation of maximum points for factor's levels. |
| plot.frfast | Visualization of frfast objects |
| print.frfast | Print.frfast |
| summary.frfast | Summary for response variable (for each level of the factor). |



```
> library(NPRegfast)
> ?NPRegfast
> data(barnacle)
> model<-frfast(x=barnacle$RC,y=barnacle$PS,f=barnacle$F)
>
```

```
> library(NPRegfast)
> ?NPRegfast
> data(barnacle)
> model<-frfast(x=barnacle$RC,y=barnacle$PS,f=barnacle$F)
> summary(model)
```

```
Call:
frfast(x = barnacle$RC, y = barnacle$PS, f = barnacle$F)
```

```
Bandwidth: 75 75
Degree of polinomial: 2
Number of bootstrap repeats: 500
Number of binning nodes 100
```

```
The number of data is: 16564
The factor's levels are: 1 2
The number of data for the level 1 is: 8684
The number of data for the level 2 is: 7880
```

```
Summaries for the variable y (for each level):
```

```
Level 1 :
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
0.0000 0.1100  0.3200  0.4945 0.7500  3.1400
```

```
Level 2 :
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
0.0000 0.1400  0.3900  0.5097 0.8000  2.4200
```

```
>
```

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> data(barnacle)
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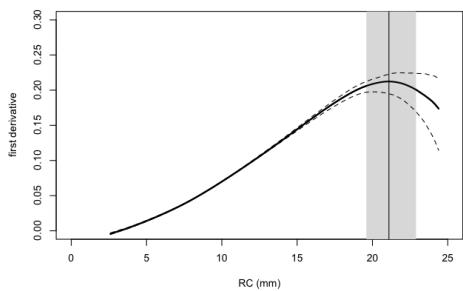
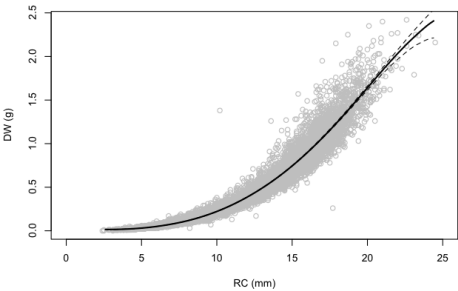
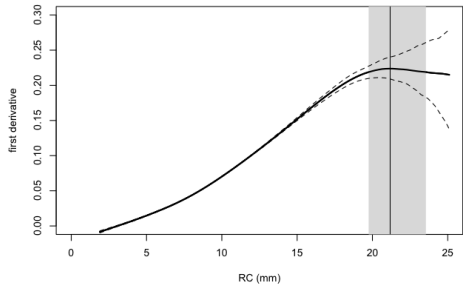
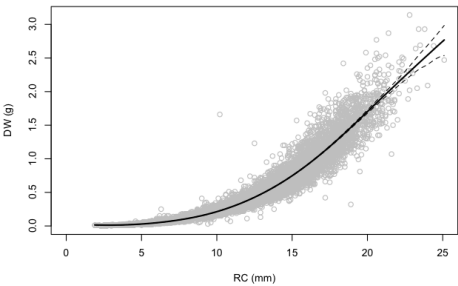
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```

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  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
0.0000 0.1400  0.3900  0.5097 0.8000  2.4200
```

```
> plot.frfast(model,der=c(1,2))
```

```
> maxp(model, der=2)
```

| | Max point | 95% IC_lower | 95% IC_upper |
|----------|-----------|--------------|--------------|
| Factor 1 | 21.17724 | 19.75234 | 23.55063 |
| Factor 2 | 21.09600 | 19.59508 | 22.89490 |

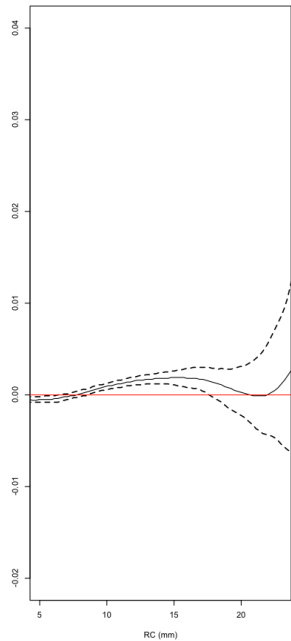
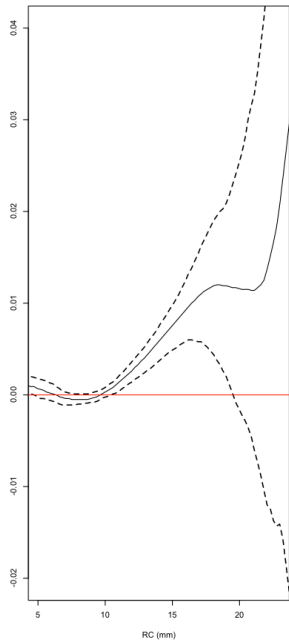
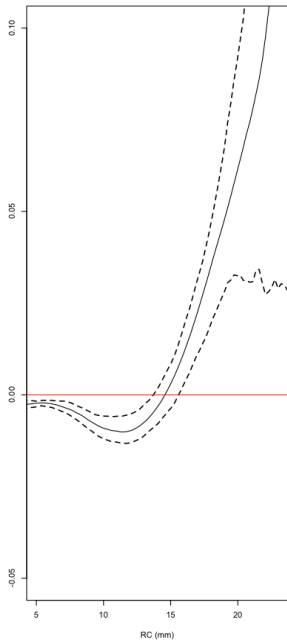
```
>
```

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> maxp(model, der=2)
```

| | Max point | 95% IC_lower | 95% IC_upper |
|----------|-----------|--------------|--------------|
| Factor 1 | 21.17724 | 19.75234 | 23.55063 |
| Factor 2 | 21.09600 | 19.59508 | 22.89490 |

```
> plot.diff(model, 1, 2)
```

```
>
```



```
> maxp(model, der=2)
```

| | Max point | 95% IC_lower | 95% IC_upper |
|----------|-----------|--------------|--------------|
| Factor 1 | 21.17724 | 19.75234 | 23.55063 |
| Factor 2 | 21.09600 | 19.59508 | 22.89490 |

```
> plot.diff(model, 1, 2)
```

```
> maxp.diff(model, der=2)
```

```
[[1]]
```

| | Factor2 | Factor1 | Max points | Diff. | 95% IC_lower | Diff. | 95% IC_upper | Diff. |
|-----------|---------|---------|------------|-------|--------------|--------|--------------|-------|
| First_der | 2 | 1 | | 0.081 | | -3.226 | | 3.156 |

```
>
```

```
> maxp(model,der=2)
```

| | Max point | 95% IC_lower | 95% IC_upper |
|----------|-----------|--------------|--------------|
| Factor 1 | 21.17724 | 19.75234 | 23.55063 |
| Factor 2 | 21.09600 | 19.59508 | 22.89490 |

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> plot.diff(model,1,2)
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```
> maxp.diff(model,der=2)
```

```
[[1]]
```

| | Factor2 | Factor1 | Max points | Diff. | 95% IC_lower | Diff. | 95% IC_upper | Diff. |
|-----------|---------|---------|------------|-------|--------------|--------|--------------|-------|
| First_der | 2 | 1 | | 0.081 | | -3.226 | | 3.156 |

```
> contrast(x=barnacle$RC,y=barnacle$PS,f=barnacle$F)
```

| | Statistic | p-value |
|----------|--------------|---------|
| Factor 1 | 0.0006768129 | 0 |
| Factor 2 | 0.0002767797 | 0 |

```
>
```

