
Subject: Re: L-moments

Posted by [rogass](#) on Mon, 28 Feb 2011 13:25:02 GMT

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On 28 Feb., 14:22, chris <rog...@googlemail.com> wrote:

> On 28 Feb., 13:13, Gray <grayliketheco...@gmail.com> wrote:

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>> On Feb 28, 6:43 am, chris <rog...@googlemail.com> wrote:

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>>> On 25 Feb., 16:25, Mark Shephard <mark.w.sheph...@gmail.com> wrote:

>

>>>> Hi,

>

>>>> I was wondering if anyone has anyone developpe IDL routines for the

>>>> method of L-moments?

>

>>>> Thanks,

>>>> Mark

>

>>> Hi Mark,

>>> something like this?

>

>>> function cr_binomial,n,m

>>> n1=1d & m1=1d & n1m1=1d

>>> for i=1d,n do n1*=i

>>> for i=1d,m do m1*=i

>>> for i=1d,(n-m) do n1m1*=i

>>> return,n1/(m1*n1m1)

>>> end

>

>>> function cr_l_moment,dat

>>> n=n_elements(dat)

>>> l1 = total(dat,/double)/cr_binomial(n,1)

>>> l2=0d &l3=0d &l4=0d

>>> for i=1d,n do begin

>>> b1 = cr_binomial(i-1,1d)

>>> b2 = cr_binomial(n-i,1d)

>>> b3 = cr_binomial(i-1,2d)

>>> b4 = cr_binomial(n-i,2d)

>>> b5 = cr_binomial(i-1,3d)

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>>>      b6      =      cr_binomial(n-i,3d)
>>>      l2+=(b1-b2)*dat[i-1]
>>>      l3+=(b3-2*b1*b2+b4)*dat[i-1]
>>>      l4+=(b5-3*b3*b2+3*b1*b4+b6)*dat[i-1]
>>> endfor
>>> l2*=0.5d /cr_binomial(n,2d )
>>> l3*=(1d / 3d )/cr_binomial(n,3d )
>>> l4*=(1d / 4d )/cr_binomial(n,4d )
>>> return,{l1:l2,l2:l2,l3:l3,l4:l4}
>>> end
>
>>> IDL> r=randomu(seed,5,5)
>>> IDL> inf=cr_l_moment(r)
>>> IDL> print,float(inf)
>>> { -0.000558181 -0.000558181  -0.0111168   0.212071}
>
>>> Cheers
>
>>> CR
>
>> I have no idea what L-moments are, but do you really need to use all
>> the FOR-loops?
>
>> function cr_binomial,n,m
>>  n1 = product(dindgen(n)+1)
>>  m1 = product(dindgen(m)+1)
>>  n1m1 = product(dindgen(n-m)+1)
>>  return, n1/(m1*n1m1)
>> end
>
> No, it is not necessary, so your suggestion reduces it to:
>
> function cr_l_moment,dat
> n=double(n_elements(dat))
> bin=product(dindgen(n)+1d,/c)
> l1 = total(dat)/bin[n-1]
> l2=0. &l3=0. &l4=0.
> for i=1l,n do begin
>   b1      =      bin[i-1]
>   b2      =      bin[n-i]
>   b3      =      b1/2d
>   b4      =      b2/2d
>   b5      =      b1/6d
>   b6      =      b2/6d
>   l2+=(b1-b2)*dat[i-1]
>   l3+=(b3-2*b1*b2+b4)*dat[i-1]
>   l4+=(b5-3*b3*b2+3*b1*b4+b6)*dat[i-1]
> endfor

```

```
> l2*=bin[n-1]
> l3*=(1./3.)/(bin[n-1]/6d)
> l4*=(1./4.)/(bin[n-1]/24d)
> return,{l1:l2,l2:l2,l3:l3,l4:l4}
> end
>
> Cheers
>
> CR
```

The type of variables(double, long, float) is inconsistent. You have to change this to double.

Cheers

CR
