
Subject: Re: L-moments

Posted by [Mark Shephard](#) on Mon, 28 Feb 2011 16:05:56 GMT

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On Feb 28, 8:25 am, chris <rog...@googlemail.com> wrote:

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

>

>

>

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

>

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

>

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

>

>>>> > Hi,

>

>>>> > I was wondering if anyone has anyone develop 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)

>>>> 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=1,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
```

Hi Chris,

Thanks for the prompt response. I will give it a try.

Thanks again,
Mark
