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:
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>
>> On 28 Feb., 13:13, Gray <graylikethec...@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 develope 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-1l]
>>>> l3+=(b3-2*b1*b2+b4)*dat[i-1l]
>>>> l4+=(b5-3*b3*b2+3*b1*b4+b6)*dat[i-1l]

```
>>>>  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-1l]
>>  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-1l]
>>          l3+=(b3-2*b1*b2+b4)*dat[i-1l]
>>          l4+=(b5-3*b3*b2+3*b1*b4+b6)*dat[i-1l]
>>  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
