Subject: Re: code for Kendall trend test
Posted by robinson.inj on Tue, 22 Jan 2008 18:10:31 GMT
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it can help you

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```
function mkstrend,x,undef=undef

;It uses the non parametric mann-kendal (mk) statistics to determine
if there
;is (or not) a signifcant trend 95%. The slope is calcu-
;lated by using the Sen's method(s). S is robust and less affected by
;outliers (sen p.k. 1968, ASAJ).
;ex. sl=mkstrend(x,undef=-999.).
;    where x is your ts: x=[0.5, 0.1, 0.2, 0.1, 0.3]
;    no slope then sl=undef. if the ts has one nan: sl=undef


if total(finite(x,/nan)) eq 0 then begin

  x=float(x)
  nx=n_elements(x)
  nx1=nx-1.
  n=nx*(nx-1)/2.  ; The number of elements in d
  d=fltarr(n)
  m=0.

  for i=0,nx1-1 do begin

    for j=i+1,nx-1 do begin

    d(m)=x(j)-x(i)
    m=m+1

    endfor

  endfor

  for i=0L,n-1 do begin

    if d(i) lt 0 then d(i)=-1.
    if d(i) eq 0 then d(i)= 0.
    if d(i) gt 0 then d(i)= 1.

  endfor

  s=total(d)
```

```
  U=x(uniq(x(sort(x))))
  Corr=0       ;Correction for tied observations (equal value)

  for y=0,n_elements(U)-1 do begin

    find=where(x eq U(y))
    uj=n_elements(find)
    Corr=Corr+uj*(uj-1)*(2*uj+5)

  endfor


  Vs=(nx*(nx-1.)*(2*nx+5.)-Corr)/18.   ;For long series it is
necessary to use the whole
                                ;eq. 2.6 (Corr) (Sen p.k. 1968,
ASAJ)

  if s gt 0. then z=(s-1)/sqrt(Vs)
  if s lt 0. then z=(s+1)/sqrt(Vs)
  if s eq 0. then z=0.

  nor=gauss_cvf(0.025)  ; Prob at 95% (two-side)

  ;The slope

  Sn=fltarr(n)
  m=0.

  for i=0,nx1-1 do begin

    for j=i+1,nx-1 do begin

        Sn(m)=(x(i)-x(j))/(i-j)
        m=m+1

    endfor

  endfor


  Snsorted=Sn(sort(Sn))
  m=float(fix(n/2.))

  if abs(z) lt nor then begin

    slope=undef
```

```
  endif else begin

     if 2*m eq n then slope=0.5*(Snsorted(m)+Snsorted(m+1))
     if 2*m+1. eq n then slope=Snsorted(m+1)

  endelse

endif else begin

   slope=undef

endelse

return, slope

end
```

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Robinson

On Jan 21, 4:46 pm, txoming...@gmail.com wrote:
> Hi folks,
>
> Does any one have or know a place to find free code in IDL to compute
> the Mann-Kendall trend test and the seasonal Kendall trend test?
>
> Thanks a lot,
>
> Domingo