

```

function SPEI=SPEI_self2(data22,scale)
A1=[];
for i=1:length(data22)
    if i < scale
        X=-999;
    else
        X=sum(data22(i-scale+1:i));
    end
    A1=[A1;X];
end
if scale==1
    A2_=A1;
else
    dd=floor((scale-1)/12)+1;
    A2_=A1(dd*12+1:length(data22),1);
end

b=sort(A2_);
num=numel(b);
W1=[];
for k=0:2
    w=0;
    for i=1:num
        w=w+(1./num).*b(i).*(1-(i-0.35)./num).^k;
    end
    W1=[W1,w];
end
b=(2.*W1(1+1)-W1(0+1))./(6.*W1(1+1)-W1(0+1)-6.*W1(2+1));
a=(W1(0+1)-2.*W1(1+1)).*b./(gamma(1+1./b).*gamma(1-1./b));
c=W1(0+1)-a.*(gamma(1+1./b).*gamma(1-1./b));

SPEI=[];
for j=1:length(A2_)
    RR_=A2_(j,1);
    P2=(1+(a./(RR_-c)).^b).^(-1);
    P=1-P2;
    if P<=0.5
        P1=P;
        W=(-2*log(P1))^0.5;
        SPEI1=W-(2.515517+0.802853*W+0.010328*W^2)./(1+1.432788*W+0.189269*W^2+0.001308*W^3);
    else
        P1=1-P;
        W=(-2*log(P1))^0.5;
        SPEI1=- (W-(2.515517+0.802853*W+0.010328*W^2)./(1+1.432788*W+0.189269*W^2+0.001308*W^3));
    end
    SPEI=[SPEI;SPEI1];
end
end

```

