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Supplement of

Spatial distribution of the daily precipitation concentration index in Algeria

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Supplement

Supplement 1: Global Program for calculating the concentration index (CI)

```
unit Unit1; interface  uses
  Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms, Dialogs,
StdCtrls, Grids; type
  TForm1 = class(TForm)
Button1: TButton; MAT: TStringGrid; Edit1: TEdit; Edit2: TEdit; Edit3: TEdit; Label1:
TLabel;Label2: TLabel; Label3: TLabel; Edit4: TEdit; Label4: TLabel; Edit5: TEdit; Label5:
TLabel; Label6:  TLabel; Edit6: TEdit; Edit7: TEdit; Label7: TLabel; Label8: TLabel; Edit8:
TEdit; Label9: TLabel; Edit9: TEdit; Edit10: TEdit; Label10: TLabel; Label11: TLabel; Edit11:
TEdit; Label12: TLabel;
    procedure Button1Click (Sender: TObject);   private
   { Déclarations privées }  public   { Déclarations publiques }  end; var
  Form1: TForm1; implementation {$R *.dfm} procedure
TForm1.Button1Click(Sender: TObject);  var F:TextFile;
 h,v:array[1..5000] of real;   i,j:integer;  Sx,Sy,Sz,Se,Sk,Sm,Sl:real;
 a1,a2,a3,a4,a5,a6,a7,a8,a9,a10,a11,a12,c:string;
begin  AssignFile(F,'c:\Chlef.txt');
          reset(F); //Rewrite(F); //Writeln(F,'Fichier crée avec ce texte à l''intérieur...'); i:=1;
while not eof(F) do begin
readln(F,h[i],v[i]); MAT.CELLS[1,0]:='X'; MAT.CELLS[2,0]:='Y'; MAT.CELLS[3,0]:='X²';
MAT.CELLS[4,0]:='Ln(X)'; MAT.CELLS[5,0]:='X*Ln(X)'; MAT.CELLS[6,0]:='Ln(Y)';
MAT.CELLS[7,0]:='X*Ln(Y)'; MAT.CELLS[0,0]:='Obs N°'; MAT.CELLS[0,i]:=inttostr(i);
MAT.CELLS[1,i]:=floattostr(h[i]); MAT.CELLS[2,i]:=floattostr(v[i]);
MAT.CELLS[3,i]:=floattostr(exp(2*Ln(strtofloat(MAT.CELLS[1,i]))));
MAT.Cells[4,i]:=floattostr(Ln(strtofloat(MAT.Cells[1,i])));
MAT.Cells[5,i]:=floattostr(strtofloat(MAT.CELLS[1,i])* strtofloat(MAT.Cells[4,i]));
MAT.Cells[6,i]:=floattostr(Ln(strtofloat(MAT.Cells[2,i])));
MAT.Cells[7,i]:=floattostr(strtofloat(MAT.Cells[1,i])* strtofloat(MAT.Cells[6,i]));
i:=i+1; end; CloseFile(F);
Sx:=0; Sy:=0; Sz:=0; Se:=0; Sk:=0; Sm:=0; Sl:=0; for
j:=1 to i-1 do begin
Sx:=Sx+STRTOFLOAT(MAT.CELLS[1,j]); Sy:=Sy+STRTOFLOAT(MAT.CELLS[2,j]);
Sz:=Sz+STRTOFLOAT(MAT.CELLS[3,j]); Se:=Se+STRTOFLOAT(MAT.CELLS[4,j]);
Sk:=Sk+STRTOFLOAT(MAT.CELLS[5,j]);Sm:=Sm+STRTOFLOAT(MAT.CELLS[6,j]);
Sl:=Sl+STRTOFLOAT(MAT.CELLS[7,j]); end;
EDIT1.TEXT:=floattostr(Sx); EDIT2.TEXT:=floattostr(Sy); EDIT3.TEXT:=floattostr(Sz);
EDIT4.TEXT:=floattostr(Se); EDIT5.TEXT:=floattostr(Sk); EDIT6.TEXT:=floattostr(Sm);
EDIT7.TEXT:=floattostr(Sl);
a1:=floattostr(strtofloat(EDIT3.TEXT)*strtofloat(EDIT6.TEXT));a2:=floattostr(strtofloat(EDIT1.
TEXT)*strtofloat(EDIT5.TEXT));a3:=floattostr(strtofloat(EDIT3.TEXT)*strtofloat(EDIT4.TEXT))
;a4:=floattostr(strtofloat(EDIT1.TEXT)*strtofloat(EDIT7.TEXT));a5:=floattostr(strtofloat(EDIT8.
TEXT)*strtofloat(EDIT7.TEXT));a6:=floattostr(strtofloat(EDIT1.TEXT)*strtofloat(EDIT4.TEXT))
;a7:=floattostr(strtofloat(EDIT8.TEXT)*strtofloat(EDIT5.TEXT));
a8:=floattostr(strtofloat(EDIT1.TEXT)*strtofloat(EDIT6.TEXT));
c:=floattostr((strtofloat(EDIT8.TEXT)*strtofloat(EDIT3.TEXT))exp(2*Ln(strtofloat(EDIT1.TEXT))));
EDIT9.TEXT:=floattostr(exp((strtofloat(a1)+strtofloat(a2)-
strtofloat(a3)strtofloat(a4))/strtofloat(c)));
EDIT10.TEXT:=floattostr((strtofloat(a5)+strtofloat(a6)-
strtofloat(a7)strtofloat(a8))/strtofloat(c)); a9:=
floattostr((strtofloat(EDIT9.TEXT)/strtofloat(EDIT10.TEXT))*exp(100*(strtofloat(EDIT10.TEXT
)))*(100-(1/strtofloat(EDIT10.TEXT)))); a10:=
floattostr((strtofloat(EDIT9.TEXT)/strtofloat( EDIT10.TEXT))*exp(0*(strtofloat(EDIT10.TEXT )))
*(0-(1/strtofloat(EDIT10.TEXT)))); a11:= floattostr(strtofloat(a9)-strtofloat(a10)); a12:=
floattostr(5000-strtofloat(a11));
```

```
EDIT11.TEXT:=floattostr(strtofloat(a12)/5000); end;
end.
```

Supplement 2: Results obtained for Chlef station by the DELPHI program (1970-2008).

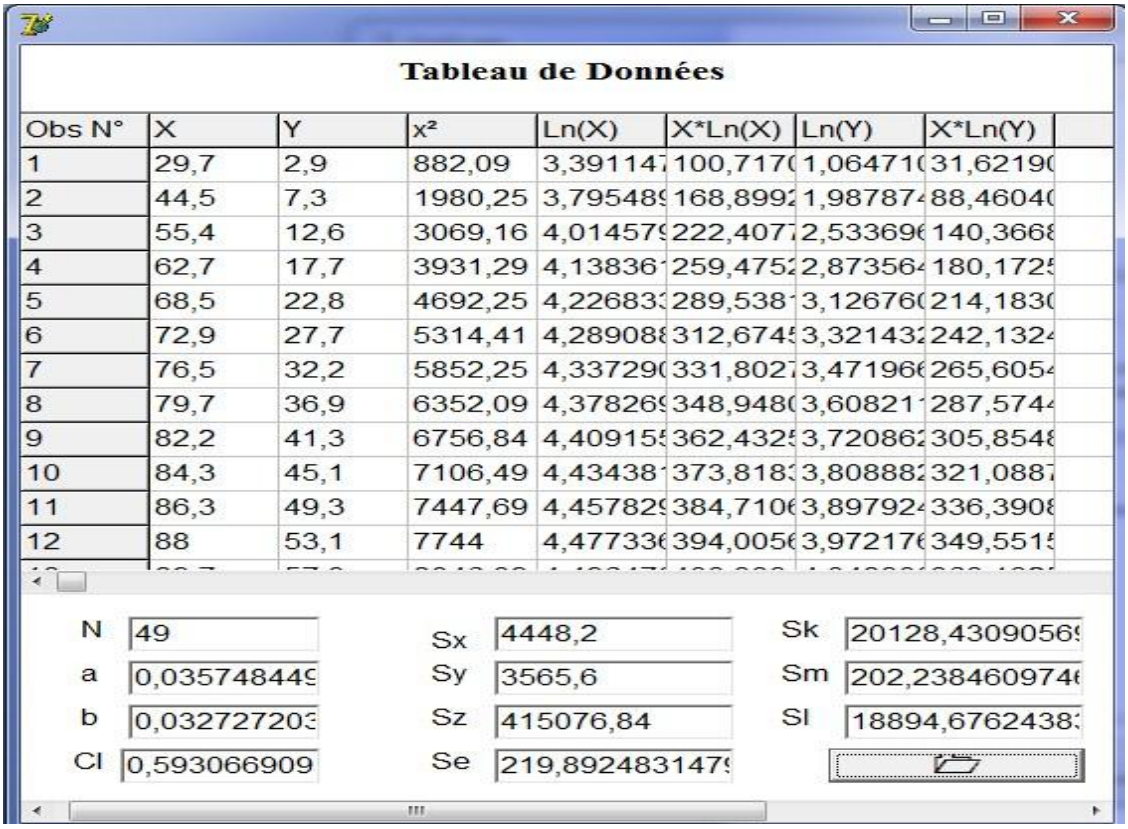

Tableau de Données

Obs N°	X	Y	x²	Ln(X)	X*Ln(X)	Ln(Y)	X*Ln(Y)
1	29,7	2,9	882,09	3,391147	100,7170	1,064710	31,62190
2	44,5	7,3	1980,25	3,795489	168,8992	1,987874	88,46040
3	55,4	12,6	3069,16	4,014579	222,4077	2,533696	140,3668
4	62,7	17,7	3931,29	4,138361	259,4752	2,873564	180,1725
5	68,5	22,8	4692,25	4,226833	289,5381	3,126760	214,1830
6	72,9	27,7	5314,41	4,289088	312,6745	3,321432	242,1324
7	76,5	32,2	5852,25	4,337290	331,8027	3,471966	265,6054
8	79,7	36,9	6352,09	4,378269	348,9480	3,608211	287,5744
9	82,2	41,3	6756,84	4,409155	362,4325	3,720862	305,8548
10	84,3	45,1	7106,49	4,434381	373,8183	3,808882	321,0887
11	86,3	49,3	7447,69	4,457829	384,7106	3,897924	336,3908
12	88	53,1	7744	4,477336	394,0056	3,972176	349,5515

N	49	Sx	4448,2	Sk	20128,43090569
a	0,035748449	Sy	3565,6	Sm	202,2384609746
b	0,032727203	Sz	415076,84	Sl	18894,67624383
Cl	0,593066909	Se	219,8924831479		