

CÁLCULO DE CONSTANTE K PARA EL ENCONTRAR LOS VALORES DE $\text{SQRT}(X^2 + Y^2)$ Y $\text{ATAN}(Y/X)^*$

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Abstract

Calculation of constant K to perform the calculus of $\text{sqrt}(x^2 + y^2)$ and $\text{atan}(y/x)$ of a vector (x,y)
lightgraygray0.5

1 Contents

- Numero de iteraciones
- n iteraciones
- Grafica de K en funcion de n
- Referencias

```
% Calculo de constante de normalizacion K
% para el calculo de sqrt(x^2+ y^2) y atan(y/x)
% Programador: Ing. Luis Moreno Yaguana
% UTPL-GESE
% ISTECS-RedDSP
clc
K=1;
K1=0;
```

2 Numero de iteraciones

```
n=19;
```

3 n iteraciones

```
for i=0:n-1
    temp=sqrt(1+2^(-2*i));
    K=temp*K;
```

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```
K1=[K1 K];  
end  
K1=K1(2:end);
```

4 Grafica de K en funcion de n

```
plot(0:n-1,K1)  
xlabel('n','FontWeight','Bold');  
yt=ylabel('Value of K','FontWeight','Bold');  
grid on  
axis([0 n min(K1) max(K1)+0.05])  
K  
lightgray  
K =  
  
1.6468  
  
black
```

Image not finished

Figure 1

5 Referencias

Jack E. Volder The CORDIC Trigonometric Computing Technique IRE Transactions EC-8, 1959, 330-334