Aula 07

gawk -f meanwspd.awk wind98le.dat

gawk -f meanmaxw.awk wind98le.dat

gawk -f windfreq.awk wind98le.dat > windfreq.out

gawk -f windfrq2.awk wind98le.dat > windfrq2.out

**EX 4.1** gawk –f winddir.awk wind98le.dat > wind98le.dir

Aula 08

**EX 4.2:**

phi\_prime(u\_prime, c, k)=exp((-1.0\*(u\_prime/c)\*\* k))

freq\_cut\_in=phi\_prime (3.0, 5.32883, 1.55037)

freq\_cut\_out=phi\_prime (20.0, 5.32883, 1.55037)

print freq\_cut\_in - freq\_cut\_out

**EX4.3:**

unset key

set xtics auto

set xrange [0:20]

rho=1.225   # Air density kg/m^3 at sea level

radius=3.0   # Rotor radius in meters

area=pi\*(radius\*\*2)   # Area swept by turbine rotors

Cp=0.4   # Power coefficient

Ng=0.75   # Generator efficiency

Nb=0.9   # Mechanical efficiency

set dummy u

Power (u)=area\* (rho\* (u\*\*3)/2)/1000

set xlabel “Wind speed, u\_0/m.s^(-1)”

set ylabel “Wind power density, P/kW.m^(-2)”

plot Power(u)\*Cp\*Ng\*Nb/area lw 2

gawk -f wpower.awk wind98le.dat > wind98le.pwr