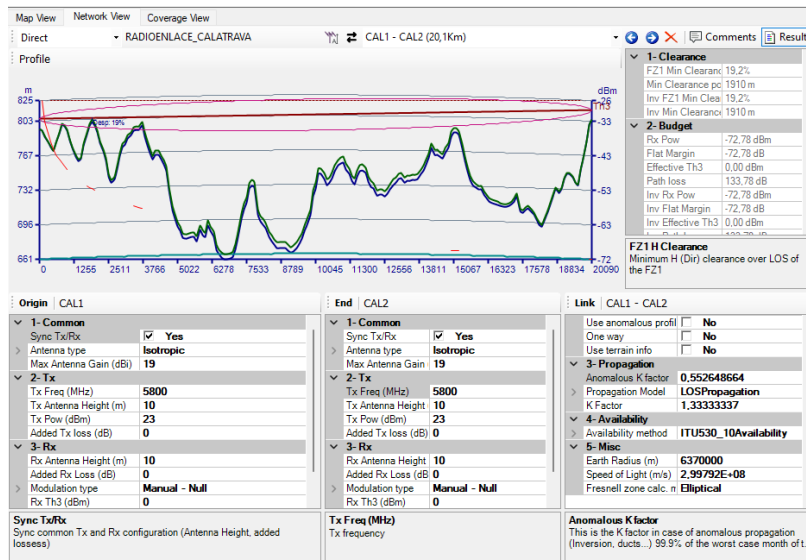


PRÁCTICA 2 RADIO: EJERCICIO 1.1



```
clear;clc;
```

```
f = 5800e6;
c=3e8;
lambda= c/f;
```

```
% Alturas, distancia y radio en metros
```

```
d = 20.09e3; %en Km
R0 = 6370e3;
```

```
e = [786 800 803 799 735 760 788 795];
a = [10 0 0 0 0 0 0 10];
d1 = [0 0.806e3 1.91e3 3.721e3 7.831e3 10.955e3 14.965e3 d];
d2 = d - d1;
```

```
% -----
k = 4/3;
Re = R0*k;
dmax = sqrt(2*Re)*(sqrt(e(1)+a(1))+sqrt(e(end)+a(end)));
```

```
if(d<0.1*dmax)
    %Código ejecutado si tierra plana
    "Tierra plana"
else
    %Código ejecutado si tierra curva
    "Tierra curva"
end
% -----
-----
```

```
%Como hay obstáculos, solo existen pérdidas por
difracción
"Hay pérdidas por difracción"
%parámetros
```

```
flecha = d1.*d2/(2*Re);
altura_rayo = ((e(end)+a(end))-e(1)-a(1))/d)
* d1 + e(1)+a(1);
despejamiento = e + flecha - altura_rayo;
```

```
R1 = sqrt(lambda*d1.*d2/d); %Altura del primer rayo de Fresnel
uve = sqrt(2)*despejamiento./R1;
```

a	[10,0,0,0,0,0,0,10]
altura_rayo	[796,796.3611,796.8556,797.6669,799.5082,800.9077,802.7041,805]
ans	"Hay pérdidas por difracción"
c	300000000
d	20090
d1	[0,806,1910,3721,7831,10955,14965,20090]
d2	[20090,19284,18180,16369,12259,9135,5125,0]
despejamiento	[-10,4.5539,8.1885,4.9187,-58.8567,-35.0163,-10.1890,-10]
dmax	2.3322e+05
e	[786,800,803,799,735,760,788,795]
f	5.8000e+09
flecha	[0,0.9150,2.0442,3.5857,5.6515,5.8913,4.5150,0]
k	1.3333
lambda	0.0517
R0	6370000
R1	[0,6.3259,9.4552,12.5227,15.7215,16.0516,14.0521,0]
Re	8.4933e+06
uve	[-Inf,1.0181,1.2248,0.5555,-5.2944,-3.0851,-1.0254,-Inf]