

Ingenieurbüro Baumann --- www.leobaumann.de --- 46282 Dorsten, Markt 6  
manuelle Berechnung eines horizontalen L-Dipols in einer Höhe b2 über Grund  
h = Länge, b2 = Höhe über Grund, l = Wellenlänge

- `reset():digits:=16:wh:=0*PI/180:k:=1/1000:vw:=0*PI/180:w:=90*PI/180:  
h:=40:b2:=12:l:=80:`

Richtdiagramm im Kugelraum als Funktion der Winkel

- `c:=(the,phil) -> abs((cos(PI*h/l*cos(the)*sin(phil))-  
cos(PI*h/l))/(sqrt(1-cos(the)^2*sin(phil-k)^2))  
*2*abs(sin(PI*2*b2/l*cos(phil))))  
+abs((cos(PI*h/l*cos(the-w)*sin(phil))-  
cos(PI*h/l))/(sqrt(1-cos(the-w)^2*sin(phil-k)^2))  
*2*abs(sin(PI*2*b2/l*cos(phil)))):`

Antennenimpedanz nach 4nec2 mittengespeist an einem Schenkel

- `Z:=86.9+I*76.5`  
 $86.9 + 76.5 \cdot i$

Antennenimpedanzen nach 4nec2 endgespeist

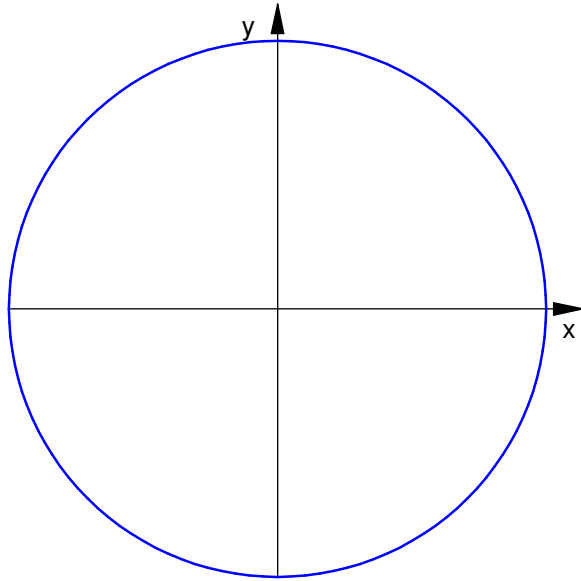
- `Z:=6639+I*4089;`  
 $6639 + 4089 \cdot i$

Antennenimpedanzen nach 4nec2 mittengespeist in der Ecke

- `Z:=2133+I*3492;`  
 $2133 + 3492 \cdot i$

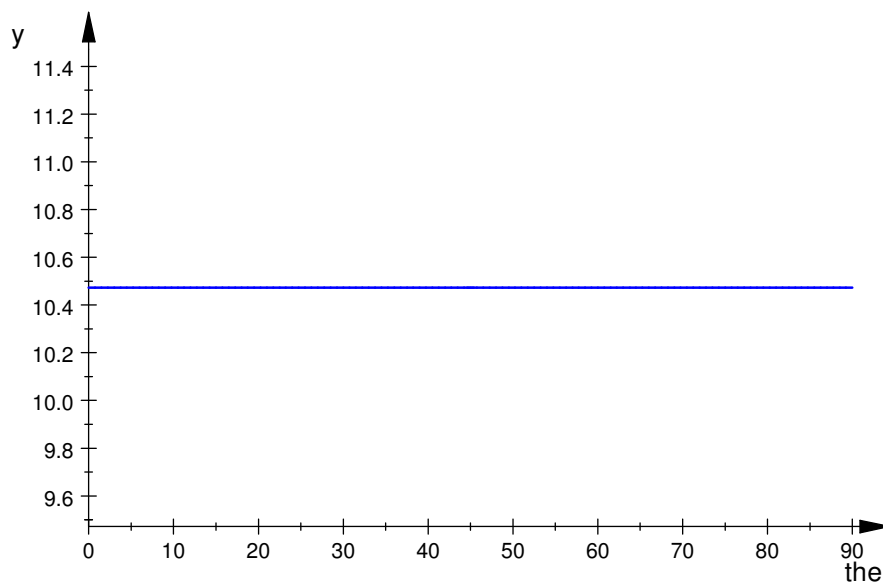
Horizontaldiagramm

- `plot(plot::Polar([c(the,vw),the], the = 0..2*PI, TicksNumber=None,  
Scaling=Constrained));`



horizontale relative Strahlungsleistungsdichte

- `plotfunc2d(c(the*PI/180,wv)^2, the = 0..90):`



Maximalwert der relativen Strahlungsleistungsdichte , auch in dBi

- `ghmax:=0:ghwmax:=0:for m from 0 to 2879 step 1 do  
gh:=float(c(m*PI/5760,wv)^2);  
if gh>ghmax then  
    ghmax:=gh;  
    ghwmax:=float(m/32);  
end_if;  
end_for:ghmax;float(10*ln(ghmax)/ln(10)+2.15);ghwmax;`

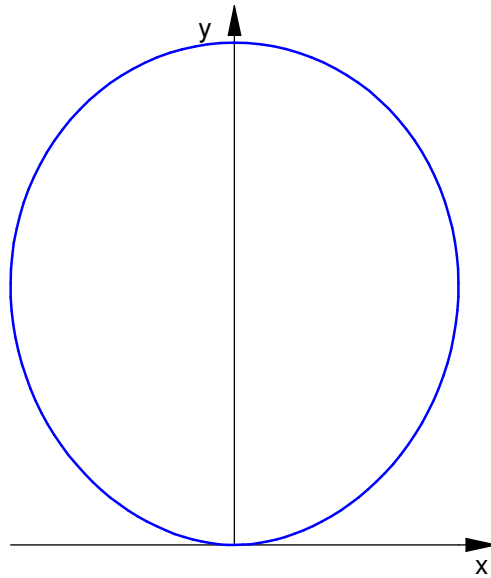
10.47214119

12.35035489

0.0

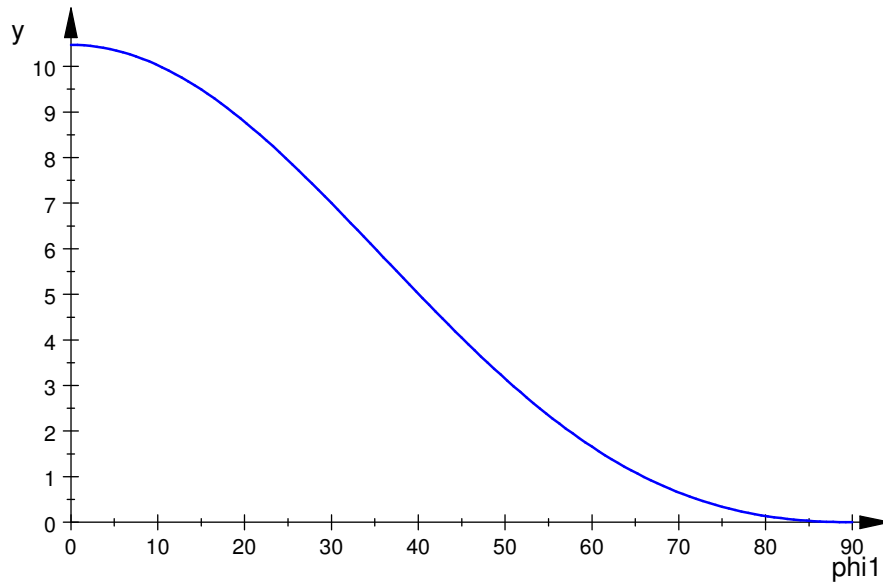
Vertikaldiagramm

- `plot(plot::Polar([c(wh,phi1),phi1+PI/2], phi1 = -PI/2..PI/2, TicksNumber=None, Scaling=Constrained));`



vertikale relative Strahlungsleistungsdichte

- `plotfunc2d(c(wh,phi1*PI/180)^2, phi1 = 0..90):`



- Maximalwert der relativen Strahlungsleistungsdichte , auch in dBi
- ```
gvmax:=0:gvwmax:=0:for m from 0 to 2879 step 1 do
gv:=float(c(wh,m*PI/5760)^2);
if gv>gvmax then
gvmax:=gv;
gvwmax:=float(m/32);
end_if;
end_for:gvmax;float(10*ln(gvmax)/ln(10)+2.15);gvwmax;
```

10.47214119

12.35035489

0.0

- ```
delete
the,phil:graph:=plot::Surface([cos(the)*sin(phil)*c(the,phil),sin(th
e)*sin(phil)*c(the,phil),cos(phil)*c(the,phil)],the=0..2*PI, phil=-
PI/2..PI/2,Axes=Origin, TicksNumber=None, Scaling=Constrained,
AdaptiveMesh=4):
```
- ```
plot(graph);
```

