

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

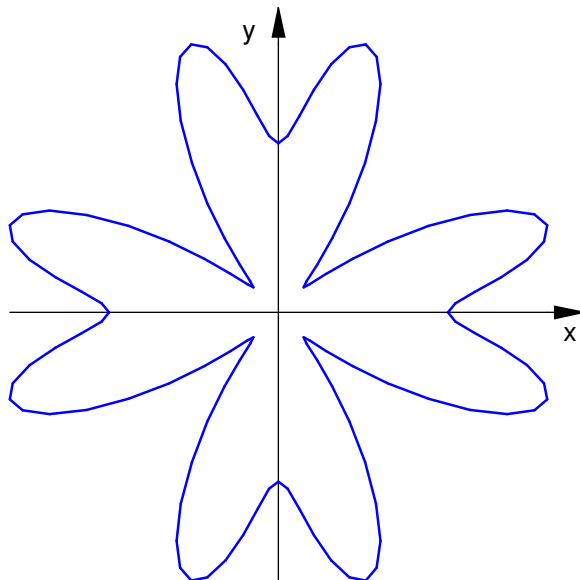
- `reset():digits:=16:wh:=17.96875*PI/180:vw:=52.28125*PI/180:w:=90*PI/180:h:=40:b2:=12:l:=10:`

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

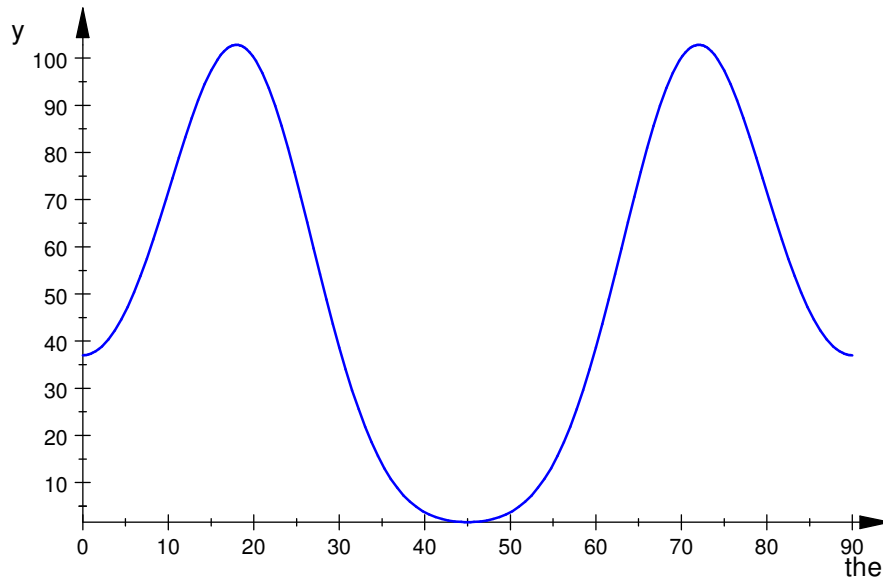
Horizontaldiagramm

- `plot(plot::Polar([c(the,wv),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 2880 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;

```

102.8170165

22.27064998

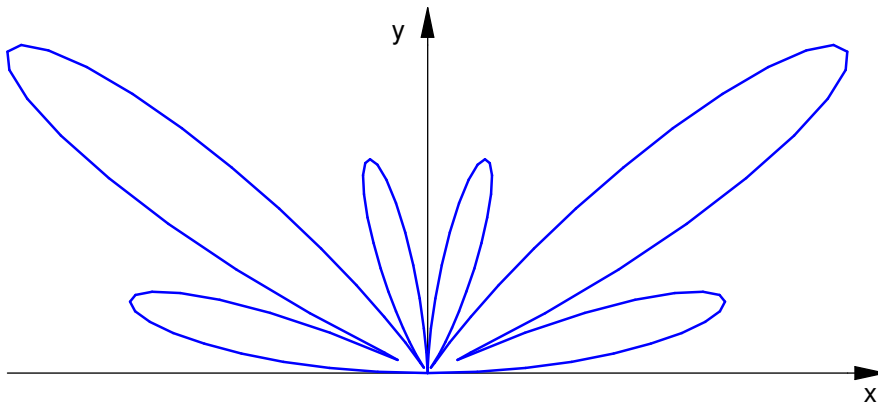
17.96875

Vertikaldiagramm

- ```

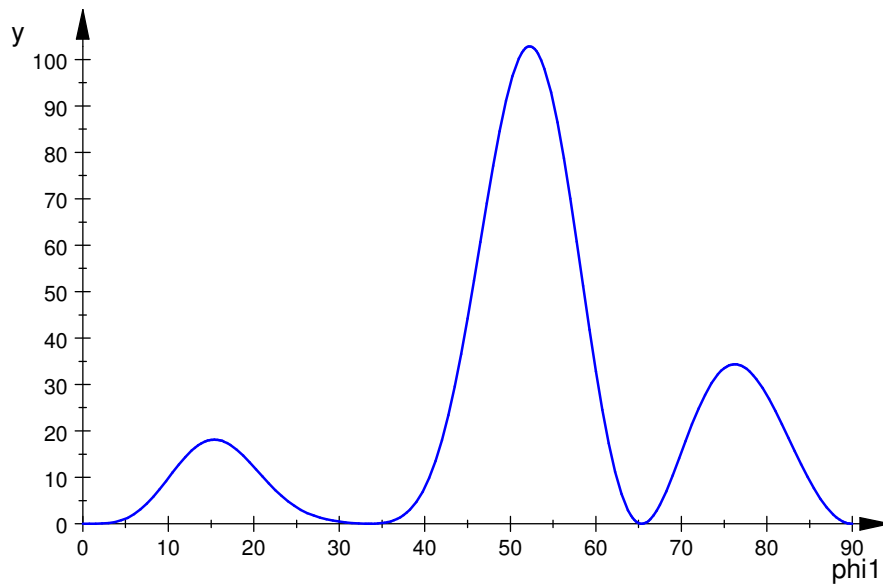
plot(plot::Polar([c(wh,phil),phil+PI/2], phil = -PI/2..PI/2,
TicksNumber=None, Scaling=Constrained));

```



vertikale relative Strahlungsleistungsdichte

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



Maximalwert der relativen Strahlungsleistungsdichte , auch in dBi

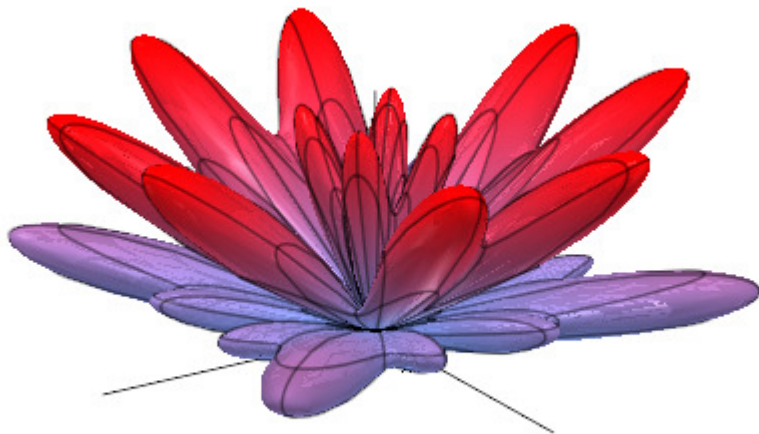
- `gvmax:=0:gvwmax:=0:for m from 1 to 2880 step 1 do  
gv:=float(c(wh,m*PI/5760)^2);  
if gv>gvmax then  
gvmax:=gv;  
gvwmax:=float(m/32);  
end_if;  
end_for:gvmax;float(10*ln(gvmax)/ln(10)+2.15);gvwmax;`

102.8170165

22.27064998

52.28125

- delete  
the,phil:graph:=plot::Surface([cos(the)\*sin(phil)\*c(the,phil),sin(the)\*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);



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