

Ingenieurbüro Baumann --- www.leobaumann.de --- 46282 Dorsten, Markt 6
 manuelle Berechnung eines horizontalen Bi-Quads in einer Höhe b2 über Grund
 h = Länge, d = Distanz, d1 = Distanz 2. Element, b2 = Höhe über Grund, l = Wellenlänge

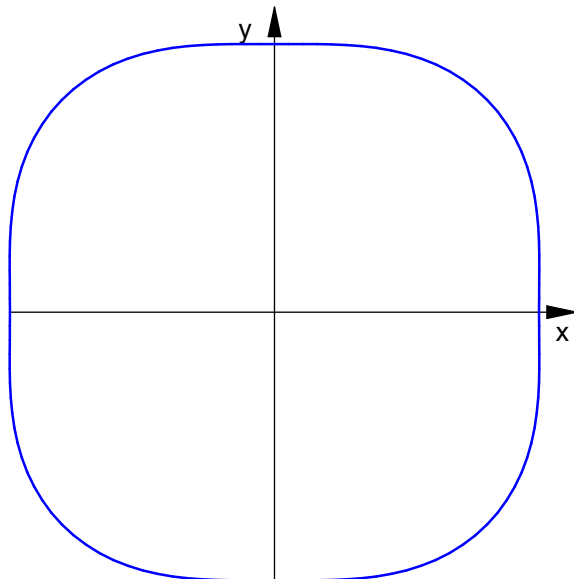
- `reset():digits:=16:wh:=45*PI/180:k:=1/1000:vw:=51.59*PI/180:w:=90*PI/180:h:=1/4:d:=h:b2:=1/1.999999:l:=1:d1:=1/2:`

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))
 *2*abs(cos(PI*h/l*sin(phil)*sin(the))
 *2*abs(cos(PI*d1/l*sin(phil)*sin(the))
 +abs((cos(PI*2*d/l*cos(the-w)*sin(phil))-cos(PI*2*d/l)))/(sqrt(1-cos(the-w)^2*sin(phil)^2))
 *2*abs(cos(PI*2*h/l*sin(phil)*sin(the-w)))
 *2*abs(sin(PI*2*b2/l*cos(phil)))):`

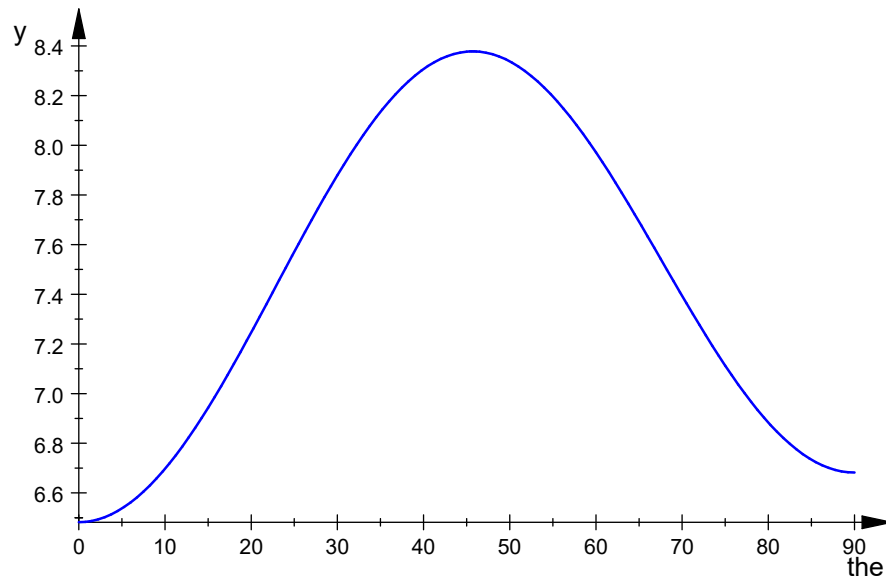
Horizontaldiagramm

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



horizontale relative Strahlungsleistungsdichte

- `plotfunc2d(c(the*PI/180,vw)^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*log(10,ghmax)+2.15);ghwmax;

```

8.378298706

11.3815584

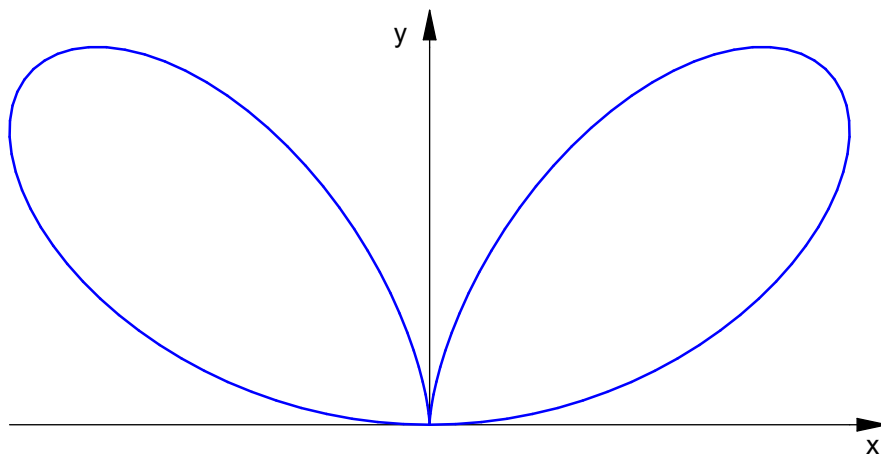
45.6875

Vertikaldiagramm, y=Horizontale

- ```

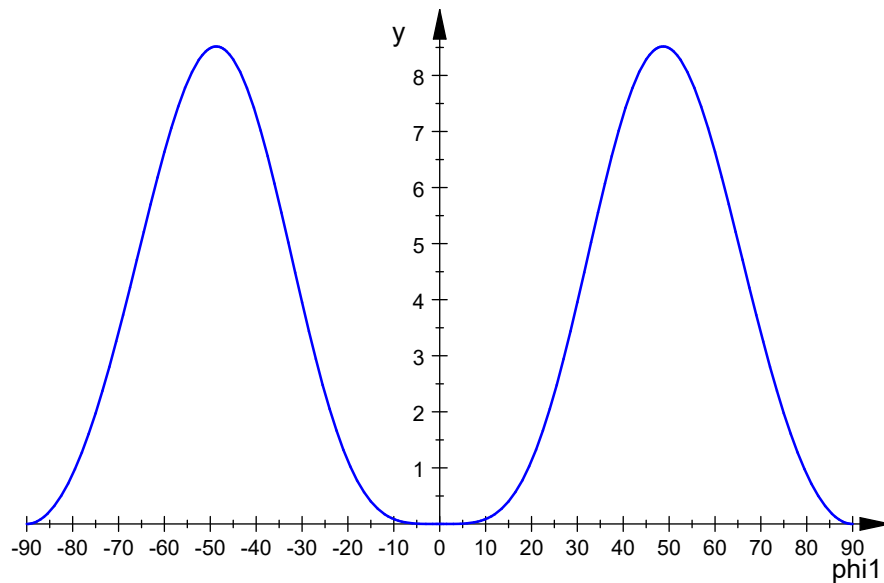
plot(plot::Polar([c(wh,phil),phil+PI/2], phil = -PI/2..PI/2,
  TicksNumber=None, Scaling=Constrained));

```



vertikale relative Strahlungsleistungsdichte

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



Maximalwert der relativen Strahlungsleistungsdichte , auch in dBi

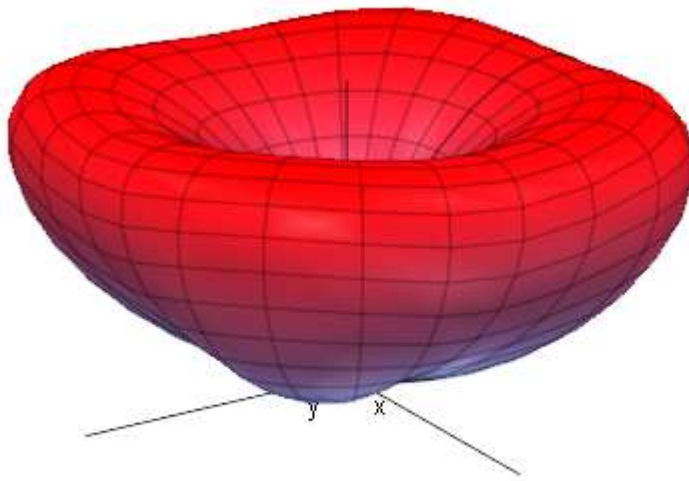
- ```
gvmax:=0:gvwmax:=0:for m from 0 to 2879 step 1 do
gv:=float(c(wh,m*PI/5760)^2);
if gv>gvmax then
gvmax:=gv;
gvwmax:=float(m/32);
end_if;
end_for:gvmax;float(10*log(10,gvmax)+2.15);gvwmax;
```

8.5161209

11.45241818

48.6875

- `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=-PI..PI, phil=-`  
`PI/2..0,Axes=Origin, TicksNumber=None, Scaling=Constrained,`  
`AdaptiveMesh=4):`
- `plot(graph);`



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