

Ingenieurbüro Baumann --- www.leobaumann.de --- Markt 6, 46282 Dorsten
manuelle Berechnung eines horizontalen Dipols im freien Raum
h = Länge, l = Wellenlänge

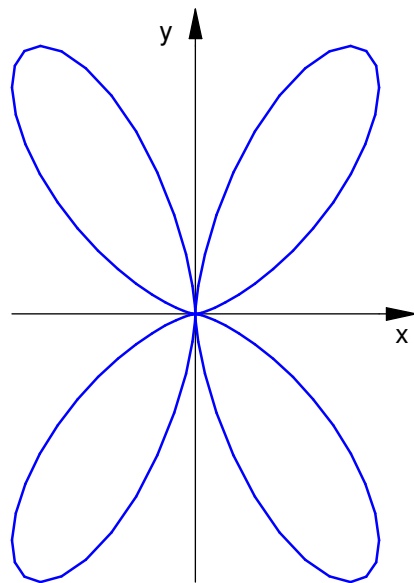
- `reset():digits:=16:k:=1/1000:wh:=57*PI/180:vw:=89.9999*PI/180:h:=2:l:=1:`

Richtdiagramm im Kugelraum als Funktion der Winkel

- `c:=(the,phi1) -> abs((cos(PI*h/l*cos(the))*sin(phi1))-cos(PI*h/l))/(sqrt(1-cos(the)^2*sin(phi1)^2)):`

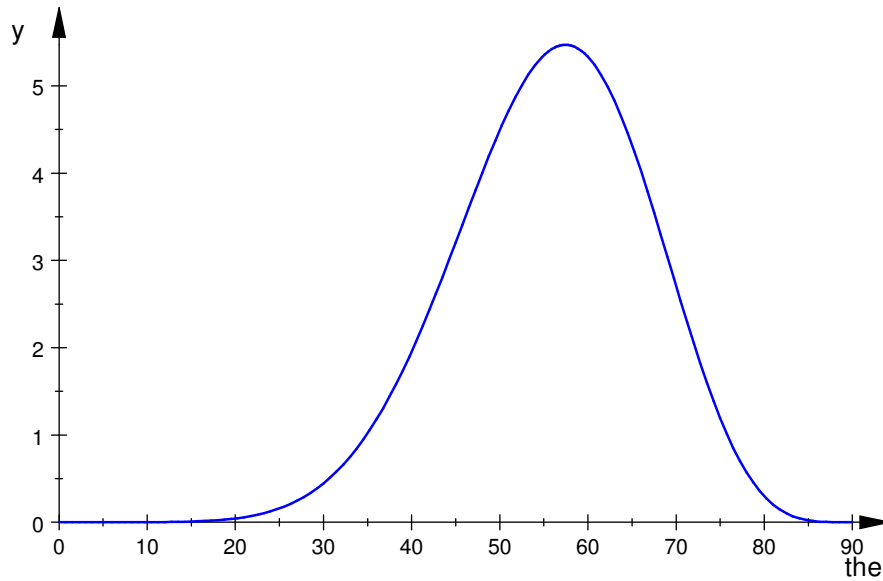
Horizontaldiagramm

- `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, Erhebungswinkel 0 Grad

- ```

ghmax:=0:ghwmax:=0:for m from 1 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;

```

5.47083461

9.530535857

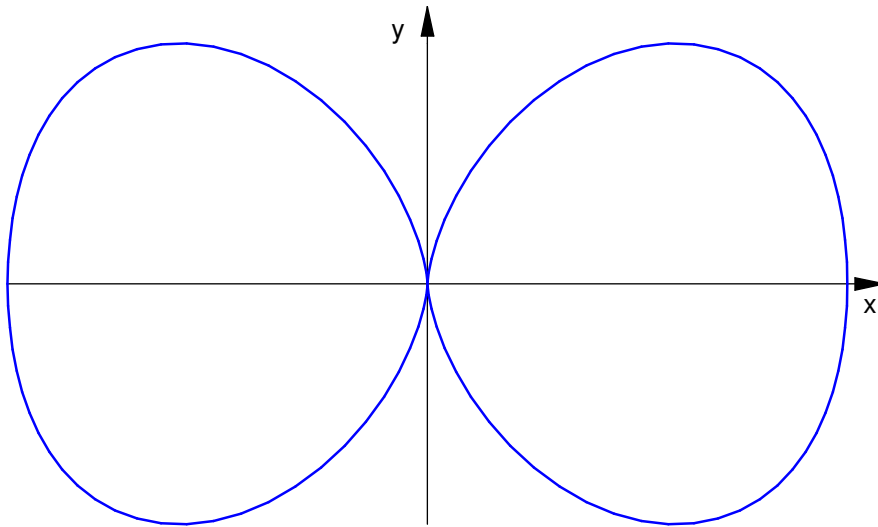
57.4375

Vertikaldiagramm

- ```

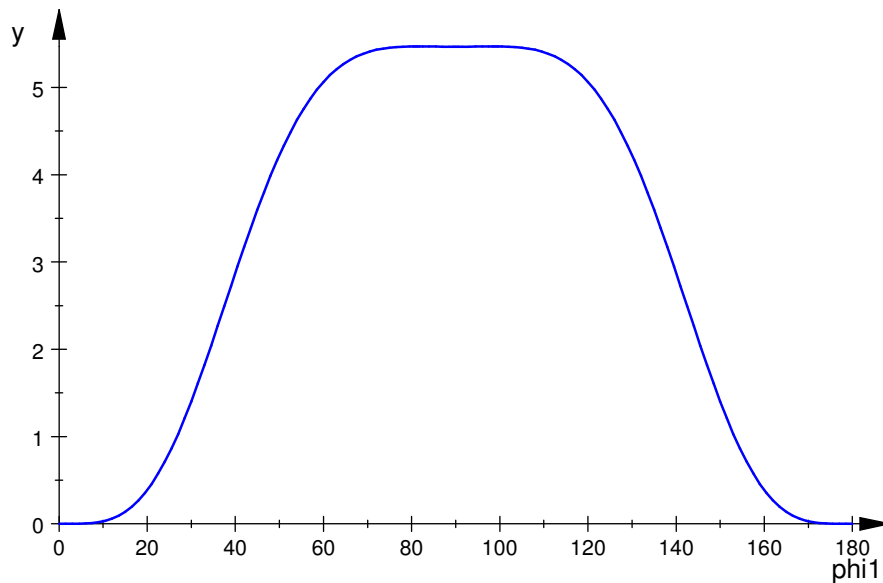
plot(plot::Polar([c(wh,phil),phil+PI/2], phil = -PI..PI,
  TicksNumber=None, Scaling=Constrained));

```



vertikale relative Strahlungsleistungsdichte

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



Maximalwert der relativen Strahlungsleistungsdichte , auch in dBi

- ```
gvmax:=0:gvwmax:=0:for m from 1 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;
```

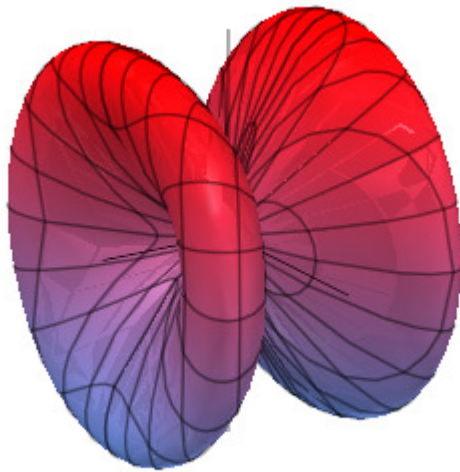
```
end_for:gvmax;float(10*ln(gvmax)/ln(10)+2.15);gvwmax;
```

5.470834639

9.53053588

81.1875

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



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