

Ingenieurbüro Baumann --- [www.leobaumann.de](http://www.leobaumann.de) --- Markt 6, 46282 Dorsten  
manuelle Berechnung eines vert. Dipols über Grund  
h = Länge, b2 = Höhe über Grund, l = Wellenlänge

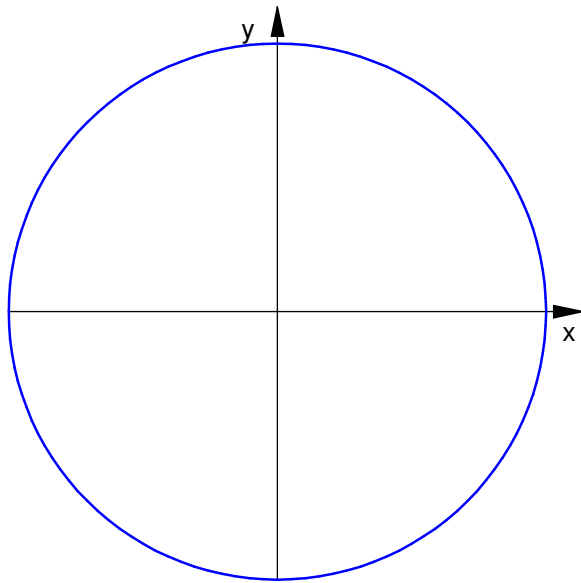
- `reset():digits:=16:vw:=90*PI/180:wh:=0:h:=1/2:b2:=12:l:=1:`

Richtdiagramm im Kugelraum als Funktion der Winkel

- `c:=(the,phi1) -> abs((cos(PI*h/l*cos(phi1))-cos(PI*h/l))/sin(phi1))  
*2*abs(cos(PI*2*(b2+h/2)/l*cos(phi1))):`

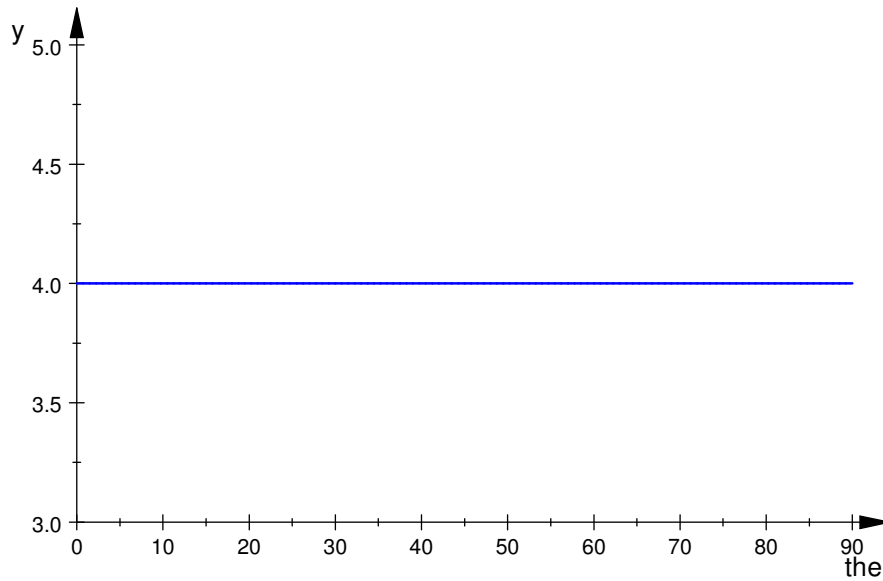
Horizontaldiagramm

- `plot(plot::Polar([c(the,vw),the], the = 0..2*PI, TicksNumber=None,  
Scaling=Constrained, AdaptiveMesh=4));`



horizontale relative Strahlungsleistungsdichte

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



Maximalwert der relativen Strahlungsleistungsdichte , auch in dB

- ```

ghmax:=0:ghwmax:=0:for m from 0 to 5 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;

```

4.0

8.170599913

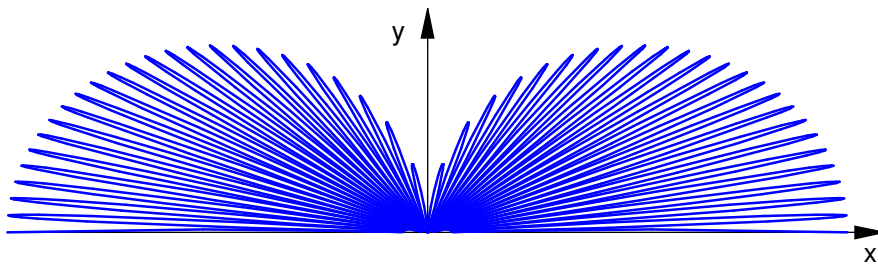
0.0

Vertikaldiagramm

- ```

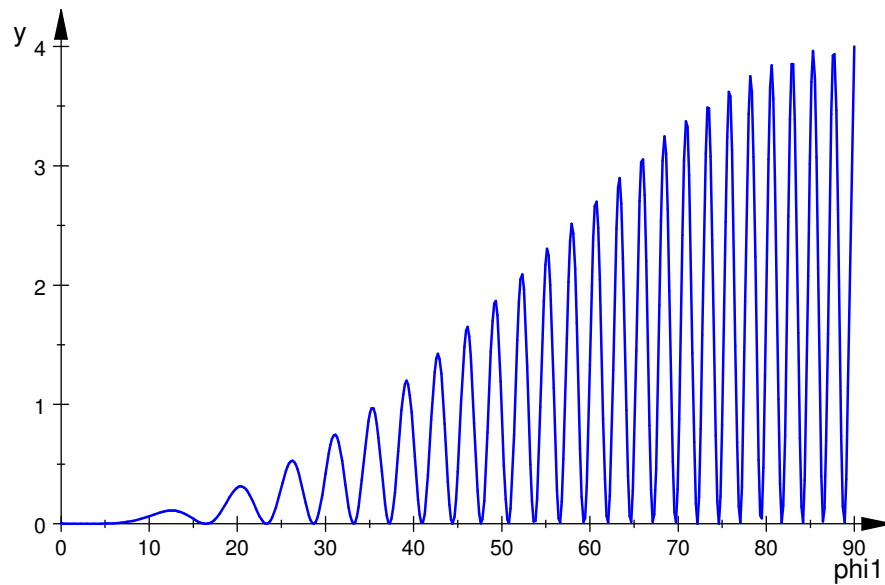
plot(plot::Polar([c(wh,phil),phil+PI/2], phil = -PI/2..PI/2,
  TicksNumber=None, Scaling=Constrained, AdaptiveMesh=4));

```



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 2720 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;`

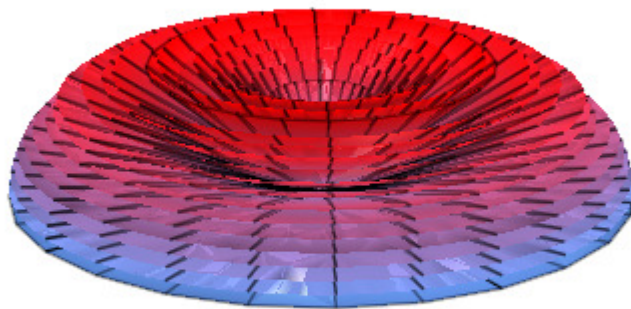
```
end_for:gvmax;float(10*log(10,gvmax)+2.15);gvwmax;
```

4.0

8.170599913

90.0

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



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