

Ingenieurbüro Baumann --- www.leobaumann.de --- Markt 6, 46282 Dorsten

manuelle Berechnung eines vert. Dipols mit gespeister Parallele und Phasenverschiebung

h = Länge, b_2 = Höhe über Grund, d = Abstand, bet = Phasenverschiebung, l = Wellenlänge

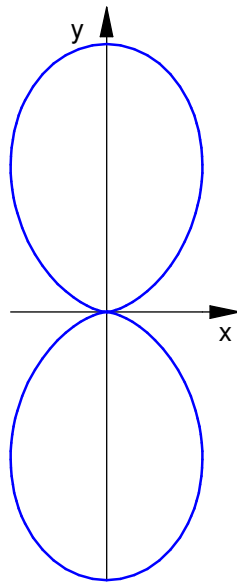
- `reset():digits:=16:vw:=90*PI/180:wh:=90*PI/180:bet:=0*PI/180:h:=1/2:
d:=1/2:b2:=1/2:l:=1:`

Richtdiagramm im Kugelraum als Funktion der Winkel

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

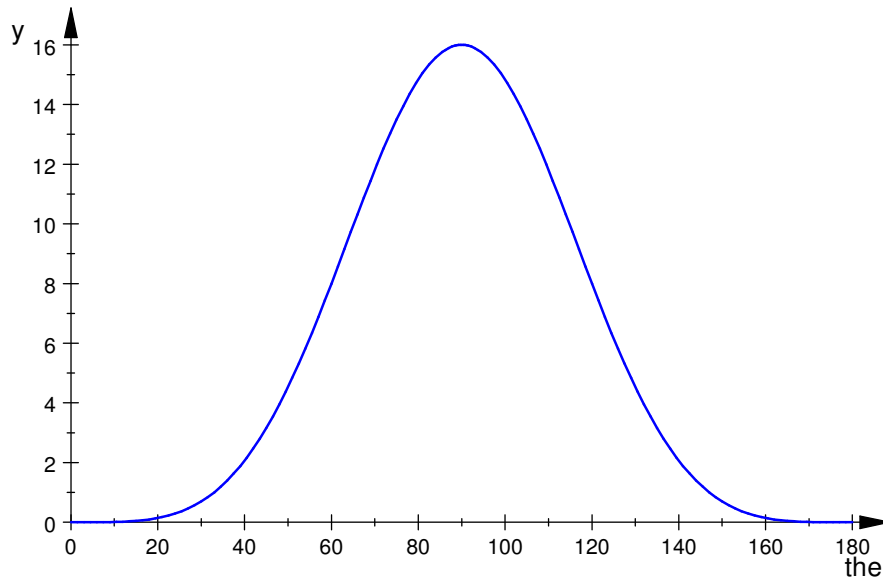
Horizontaldiagramm

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



horizontale relative Strahlungsleistungsdichte

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



Maximalwert der relativen Strahlungsleistungsdichte , auch in dB

- ```

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;

16.0

14.19119983

90.0

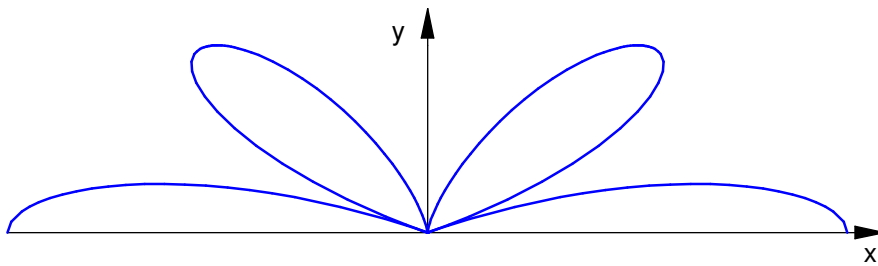
```

Vertikaldiagramm

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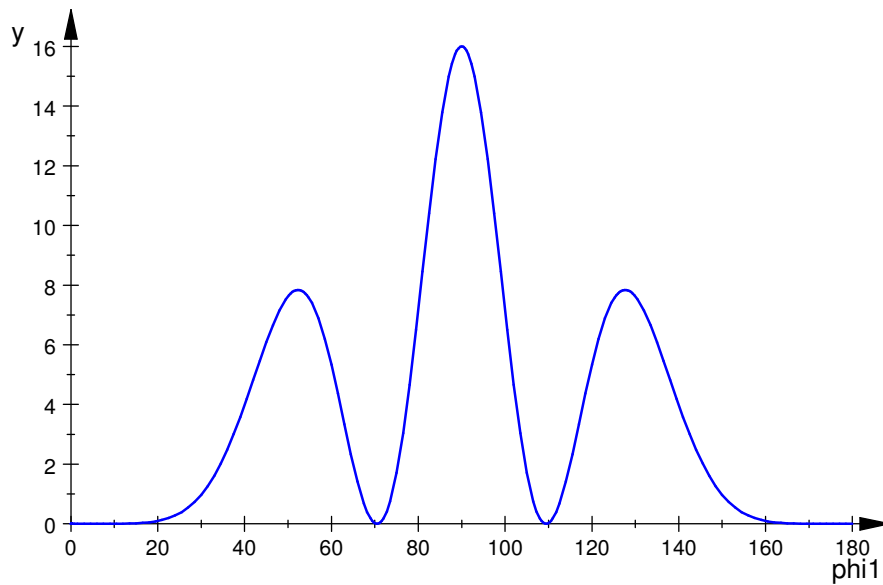
plot(plot::Polar([c(wh,phil),phil+PI/2], phil = -PI/2..PI/2,
  TicksNumber=None, Scaling=Constrained, AdaptiveMesh=4));

```



vertikale relative Strahlungsleistungsdichte

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



- Maximalwert der relativen Strahlungsleistungsdichte , auch in dB
- `gvmax:=0:gvwmax:=0:for m from 2560 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;`

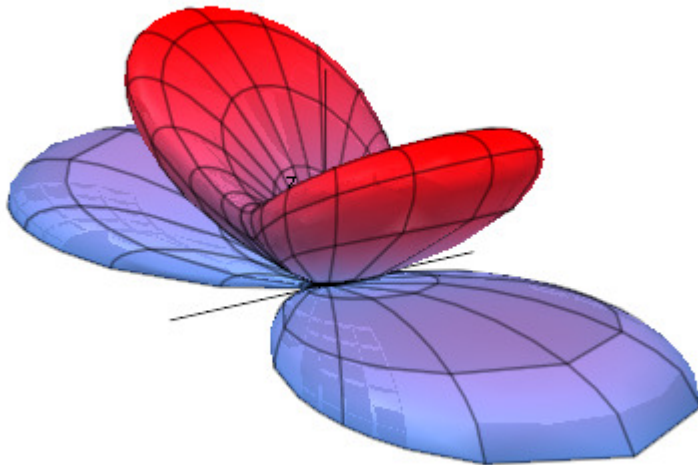
```
end_for:gvmax;float(10*ln(gvmax)/ln(10)+2.15);gvwmax;
```

15.99988732

14.19116924

89.96875

- `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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