

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

manuelle Berechnung eines horizontalen Bi-Quads d2 vor einer Wand in einer Höhe b2 über Grund
h = Länge, d = Distanz, d1 = Distanz 2. Element, d2 = Distanz Wand (Reflektor 2*d2), b2 = Höhe über Grund, l = Wellenlänge

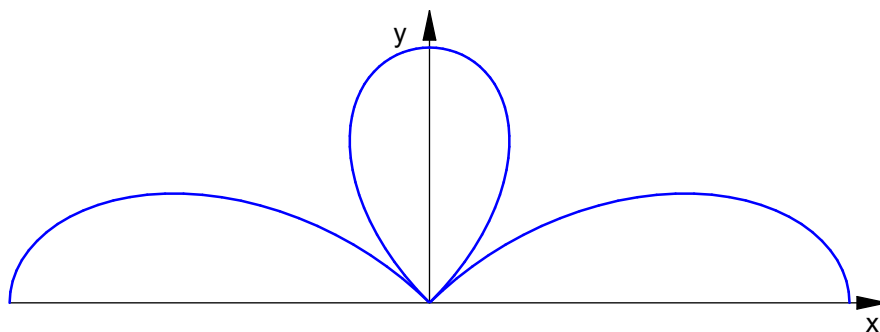
- `reset():digits:=16:wh:=0*PI/180:k:=1/1000:vw:=45.09*PI/180:w:=90*PI/180:h:=1/4:d:=h:b2:=1/1.999999:l:=1:d1:=1/2:d2:=1:`

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(cos(PI*d2/l*sin(phil)*sin(the))
*2*abs(sin(PI*2*b2/l*cos(phil))))):`

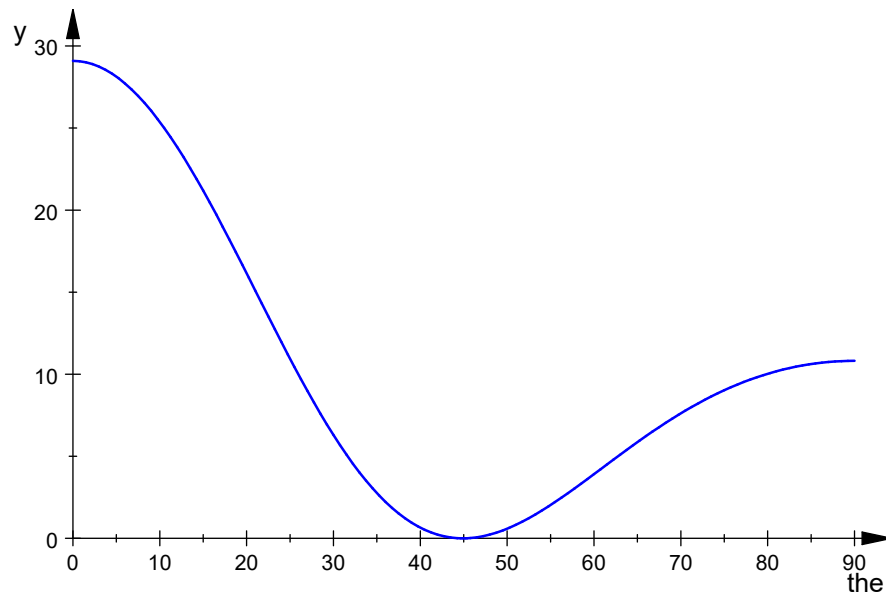
Horizontaldiagramm

- `plot(plot::Polar([c(the,vw),the], the = 0..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;`

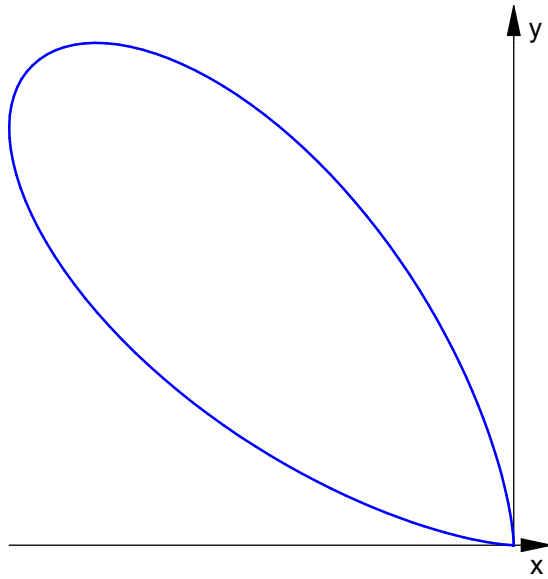
29.09495523

16.78817693

0.0

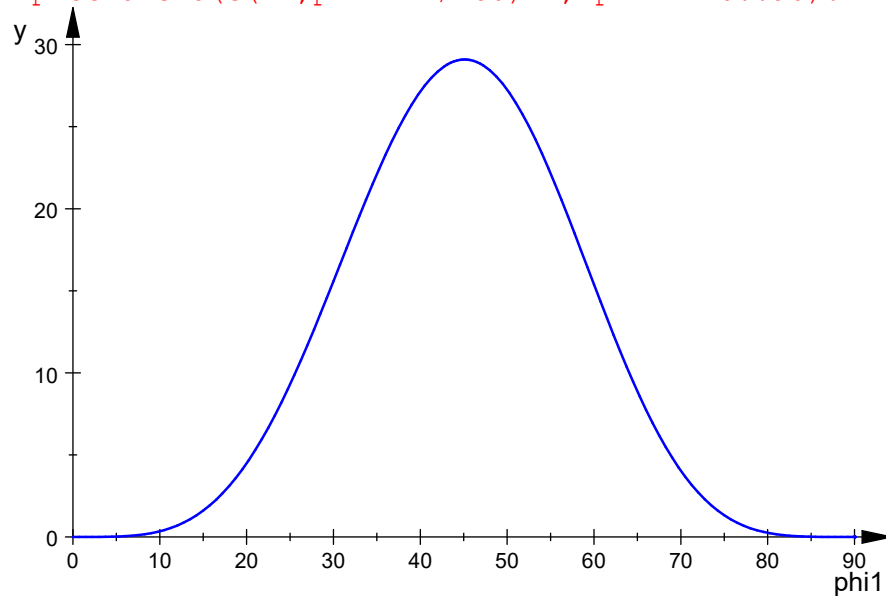
Vertikaldiagramm, y=Horizontale

- `plot(plot::Polar([c(wh,phil),phil+PI/2], phil = 0..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

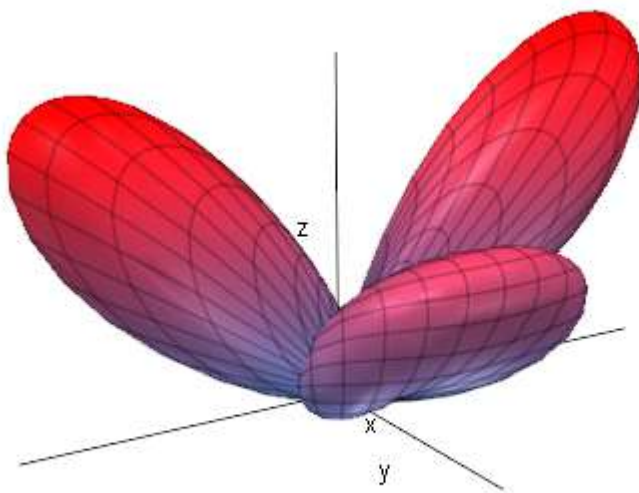
- `gvmax:=0:gvwmax:=0:for m from 0 to 2879 step 1 do
gv:=float(c(wh,m*PI/5760)^2);
if gv>gvmax then
gvmax:=gv;
gvwmax:=float(m/32);
end_if;
end_for:gvmax;float(10*log(10,gvmax)+2.15);gvwmax;`

29.09495903

16.7881775

45.09375

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



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