Ingenieurbüro Baumann --- www.leobaumann.de --- Markt 6, 46282 Dorsten
manuelle Berechnung eines vert. Dipols mit gespeister Parallele und Phasenverschiebung
h = Länge, b2 = Höhe über Grund, d = Abstand, bet = Phasenverschiebung, l = Wellenlänge

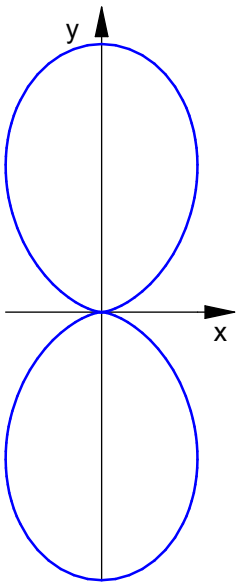
- `reset():digits:=16:wv:=90*PI/180:wh:=90*PI/180:bet:=0*PI/180:h:=1/2:d:=1/2:b2:=1/2:l:=1:`

Richtdiagramm im Kugelraum als Funktion der Winkel

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

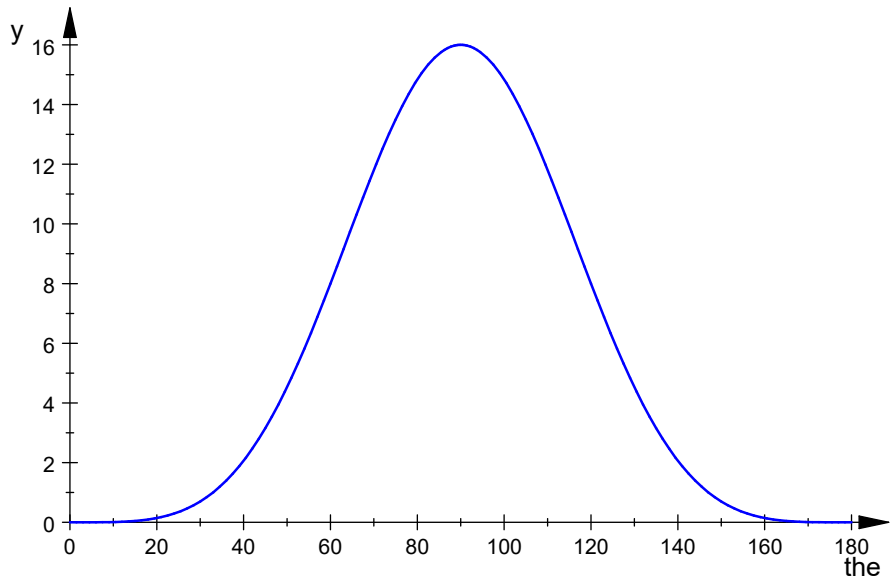
Horizontaldiagramm

- `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 Stahlungsleistungsdichte , 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*log(10,ghmax)+2.15);ghwmax;
  ```

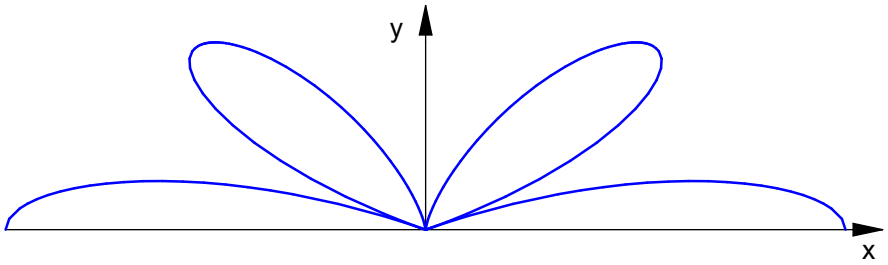
  16.0

  14.19119983

  90.0

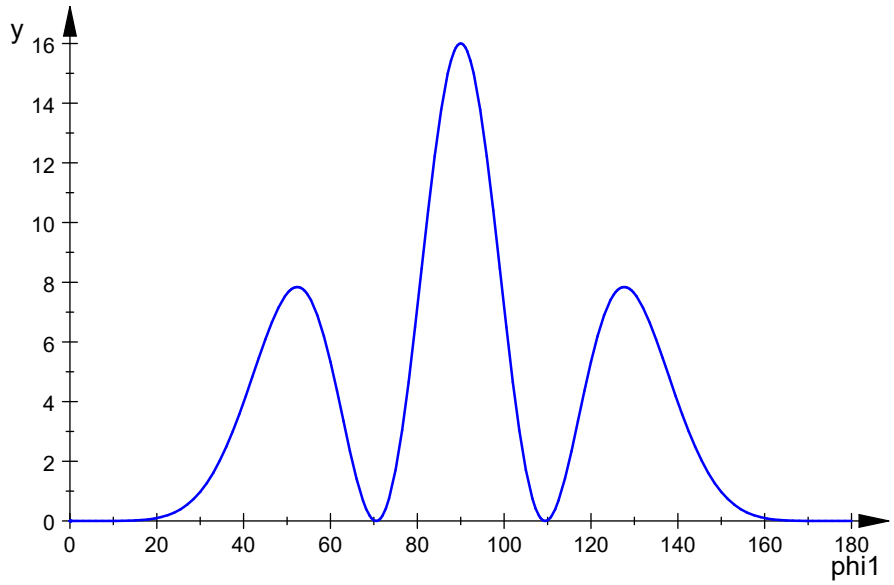
Vertikaldiagramm

- ```
  plot(plot::Polar([c(wh,phi1),phi1+PI/2], phi1 = -PI/2..PI/2,
  TicksNumber=None, Scaling=Constrained, AdaptiveMesh=4));
  ```



vertikale relative Strahlungsleistungsdichte

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



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Maximalwert der relativen Stahlungsleistungsdichte , auch in dB

- ```
  gvmax:=0:gvwmax:=0:for m from 2560 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;
  ```
  ```

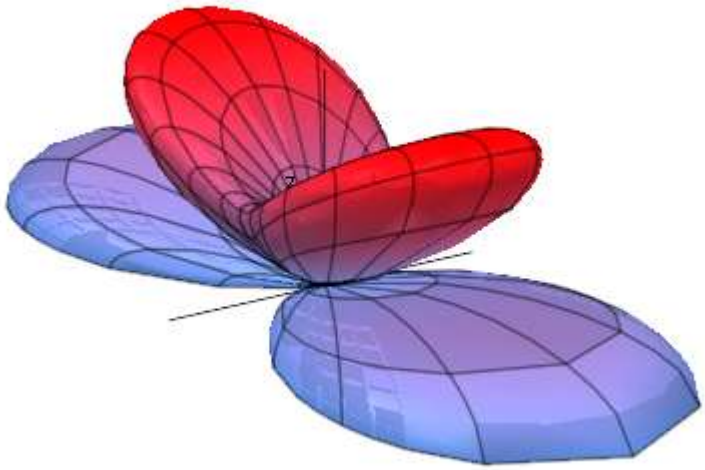
```
end_for:gvmax;float(10*log(10,gvmax)+2.15);gvwmax;
```

16.0

14.19119983

90.0

- ```
  graph:=plot::Surface([cos(the)*sin(phi1)*c(the,phi1),sin(the)*sin(ph
  i1)*c(the,phi1),cos(phi1)*c(the,phi1)],the=0..2*PI, phi1=-
  PI/2..PI/2,Axes=Origin, TicksNumber=None, Scaling=Constrained,
  AdaptiveMesh=4):
  ```
- ```
  plot(graph);
  ```



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