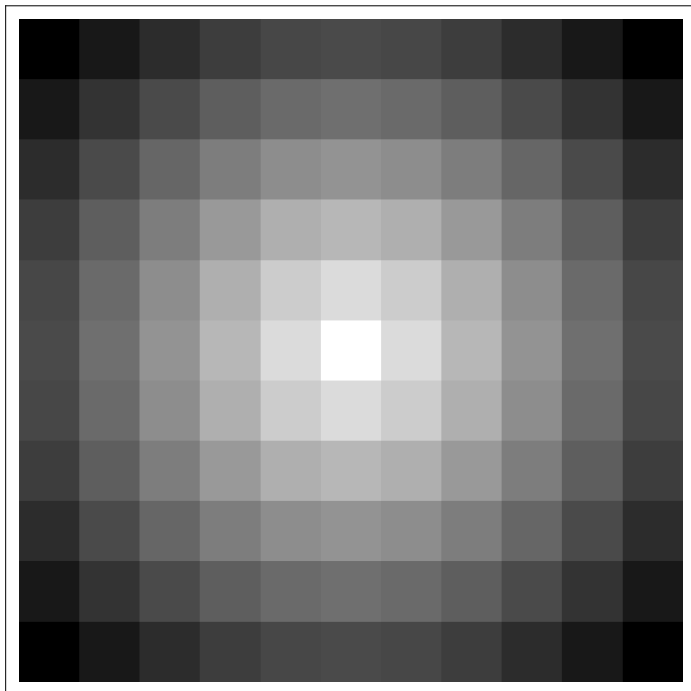


# ArrayPlot

```
In[ ]:= h = 10;  
data = Table[a + b I, {a, -2, 2, 4 / h}, {b, -2, 2, 4 / h}];  
ArrayPlot[data]
```

Out[ ]:=



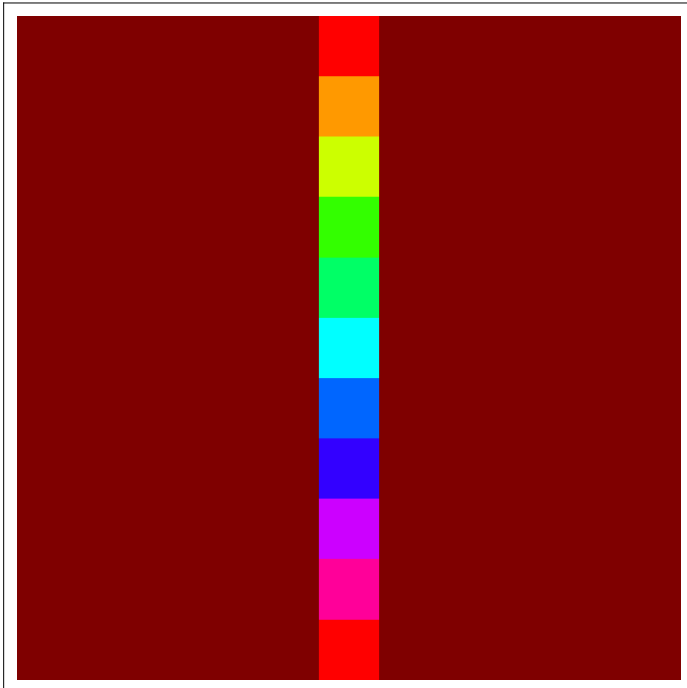
```
In[ ]:= ArrayPlot[data, ColorFunction -> Hue]
```

图示数组

颜色函数

色相

Out[ ]:=



```
In[ ]:= ArrayPlot[Abs[data], ColorFunction -> Hue]
```

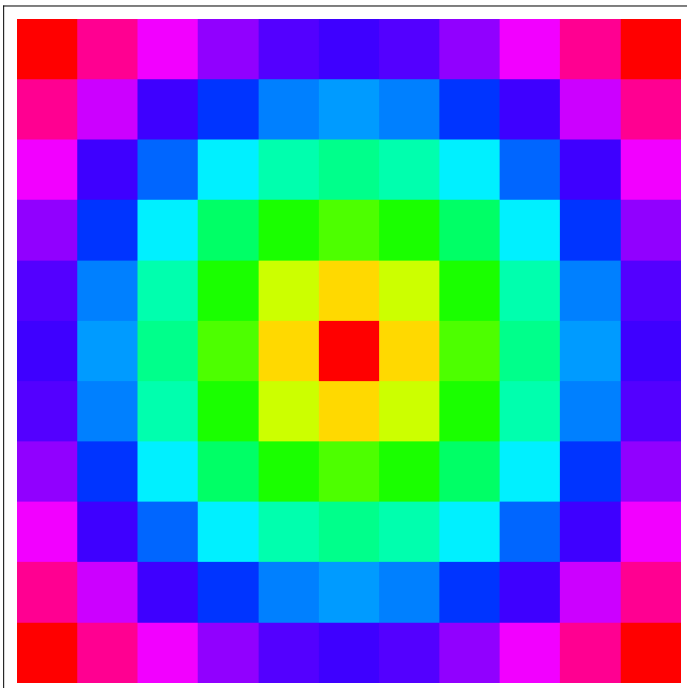
图示数组

绝对值

颜色函数

色相

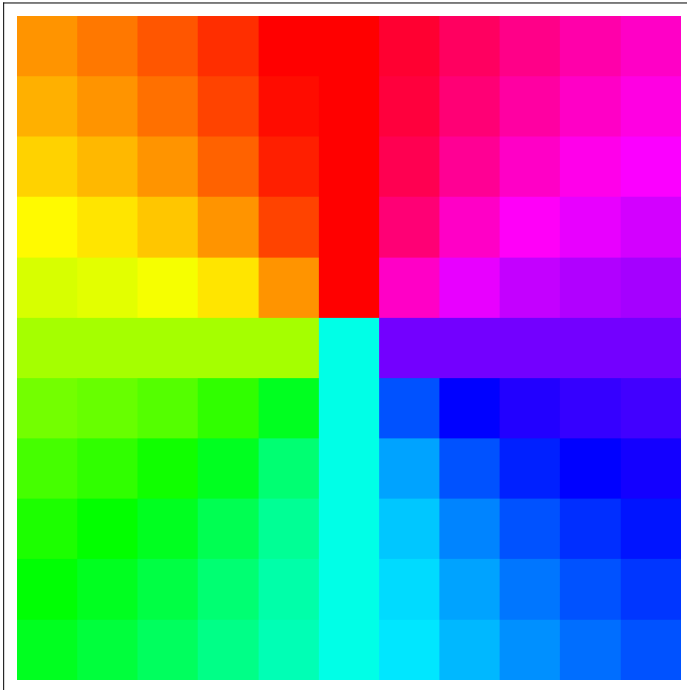
Out[ ]:=



```
In[ ]:= ArrayPlot[Arg[data], ColorFunction -> Hue]
```

图示数组      辐角      颜色函数      色相

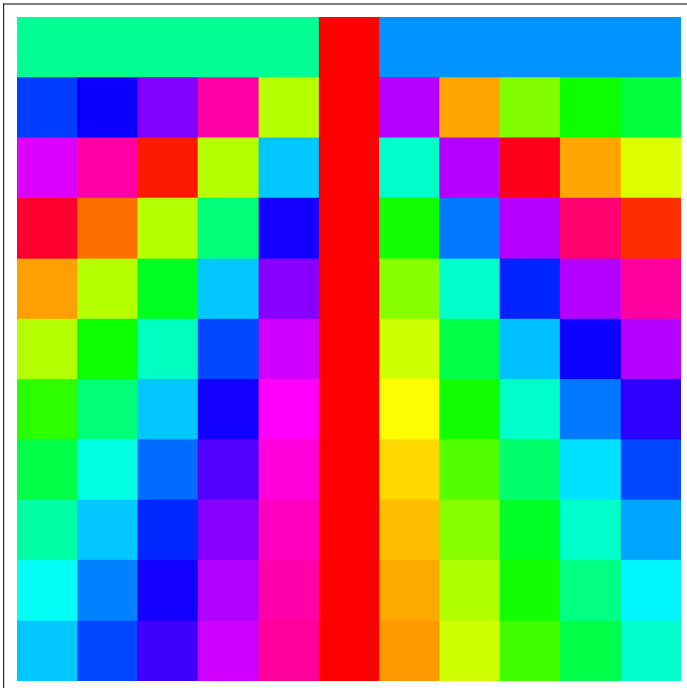
Out[ ]:=



```
In[ ]:= ArrayPlot[data, ColorFunction -> (Hue[Arg[#]] &)]
```

图示数组      颜色函数      色相 辐角

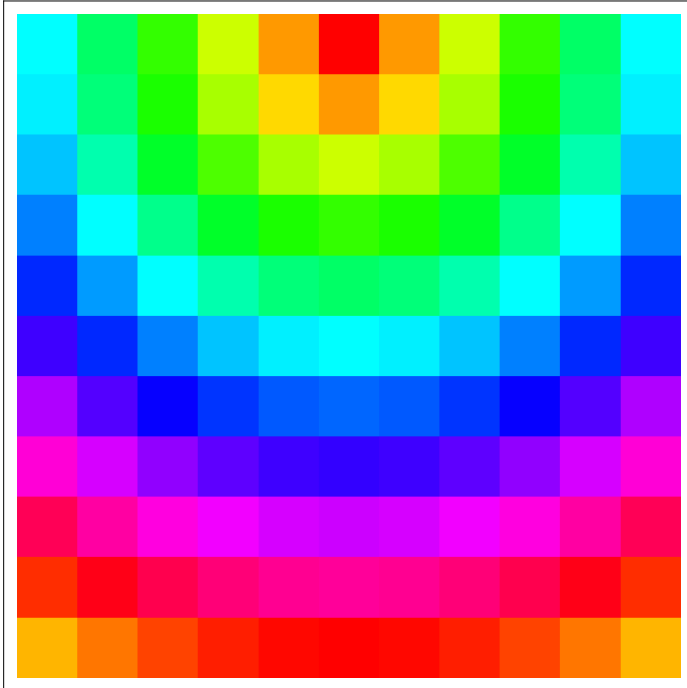
Out[ ]:=



```
In[ ]:= ArrayPlot[data, ColorFunction -> (Hue[Abs[#]] &)]
```

[图示数组]
[颜色函数]
[色相]
[绝对值]

Out[ ]:=



```
In[ ]:= h = 100.1;
```

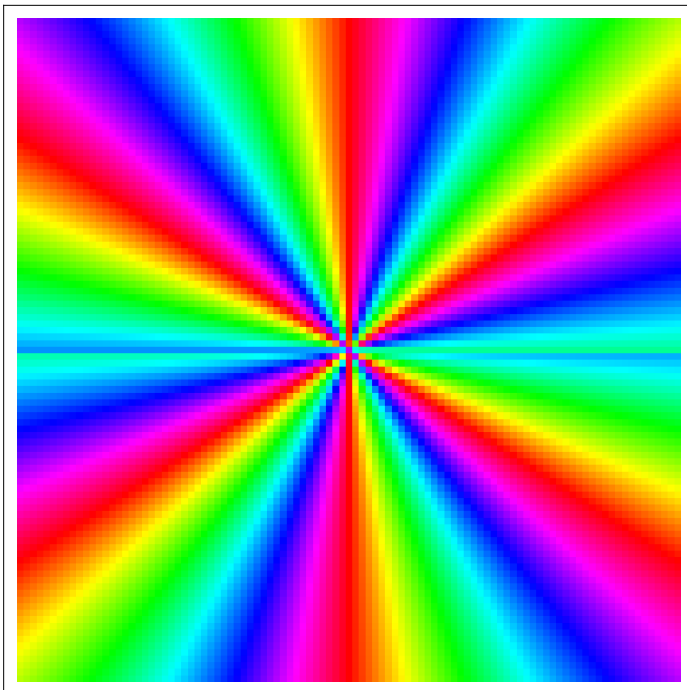
$$\text{data} = \text{Table}\left[\frac{a + b i}{a - b i}, \left\{a, -2, 2, \frac{4}{h}\right\}, \left\{b, -2, 2, \frac{4}{h}\right\}\right];$$

[表格]

```
ArrayPlot[data, ColorFunction -> (Hue[Arg[#1]] &)]
```

[图示数组]
[颜色函数]
[色相]
[辐角]

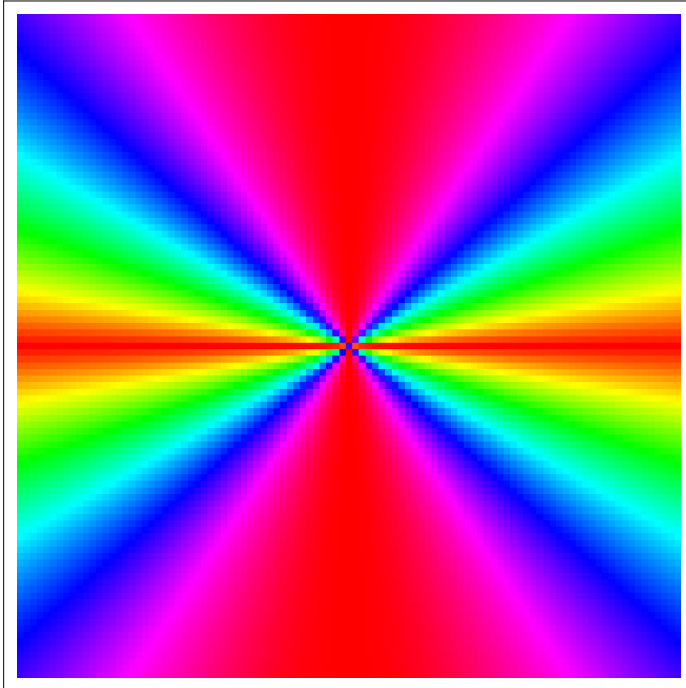
Out[ ]:=



```
In[ ]:= ArrayPlot[data, ColorFunction -> (Hue[Abs[#1]] &)]
```

图示数组      颜色函数      色相   绝对值

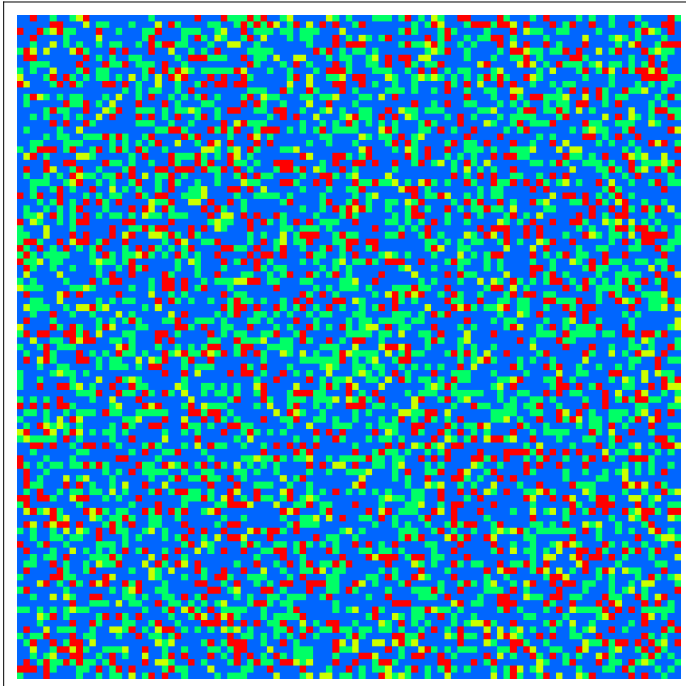
Out[ ]:=



```
In[ ]:= ArrayPlot[Abs[data], ColorFunction -> Hue]
```

图示数组      绝对值      颜色函数      色相

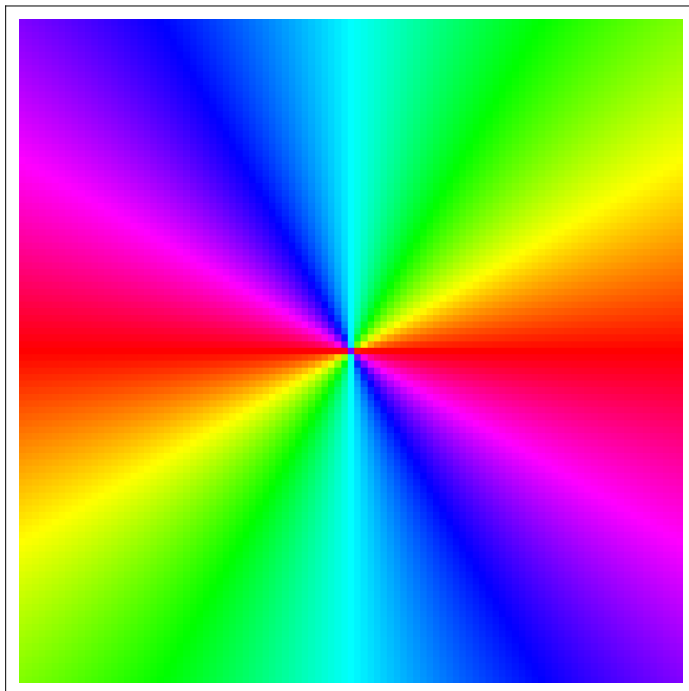
Out[ ]:=



```
In[ ]:= ArrayPlot[Arg[data], ColorFunction -> Hue]
```

图示数组      辐角      颜色函数      色相

Out[ ]:=

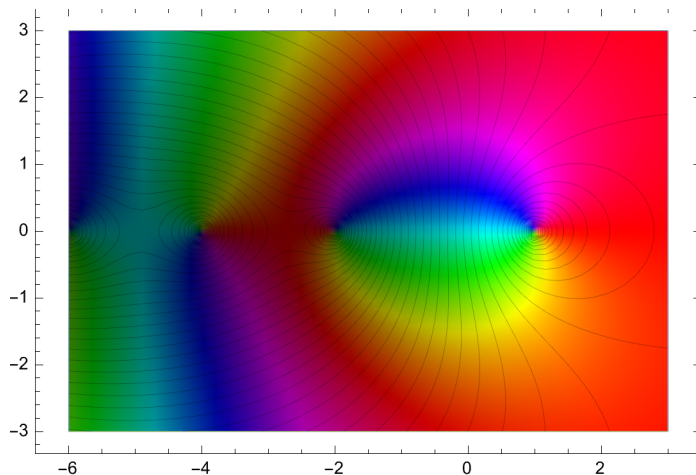


```

In[ ]:= ParametricPlot[(*just need a vis function that will
|绘制参数图
    allow x and y to be in the color function*){x, y}, {x, -6, 3},
    {y, -3, 3}, (*color and mesh functions don't trigger refinement,
    so just use a big grid*) PlotPoints → 50, MaxRecursion → 0, Mesh → 50,
    |绘图点 |最大递归 |网格
    (*turn off scaling so we can do computations with the actual complex values*)
    ColorFunctionScaling → False,
    |颜色函数缩放 |假
    ColorFunction → (Hue[(*hue according to argument,with shift so arg(z)==0 is red*)
    |颜色函数 |色相
        Rescale[Arg[Zeta[# + I #2]], {-Pi, Pi}, {0, 1} + 0.5], 1, (*fudge brightness a
        |重新调整 |辐角 |黎曼ζ函数 |虚数单位 |... |圆周率
        bit:0.1 keeps things from getting too dark,2 forces some actual bright areas*)
        Rescale[Log[Abs[Zeta[# + I #2]]], {-Infinity, Infinity}, {0.1, 2}]] &),
        |重新调整 |对数 |... |黎曼ζ函数 |虚数单位 |无穷大 |无穷大
    (*mesh lines according to magnitude,scaled to avoid the pole at z=1*)
    MeshFunctions → {Log[Abs[Zeta[#1 + I #2]]] &}, (*turn off axes,
    |网格函数 |对数 |... |黎曼ζ函数 |虚数单位
    because I don't like them with frames*) Axes → False]
    |虚数单位 |坐标轴 |假

```

Out[ ]:=



```

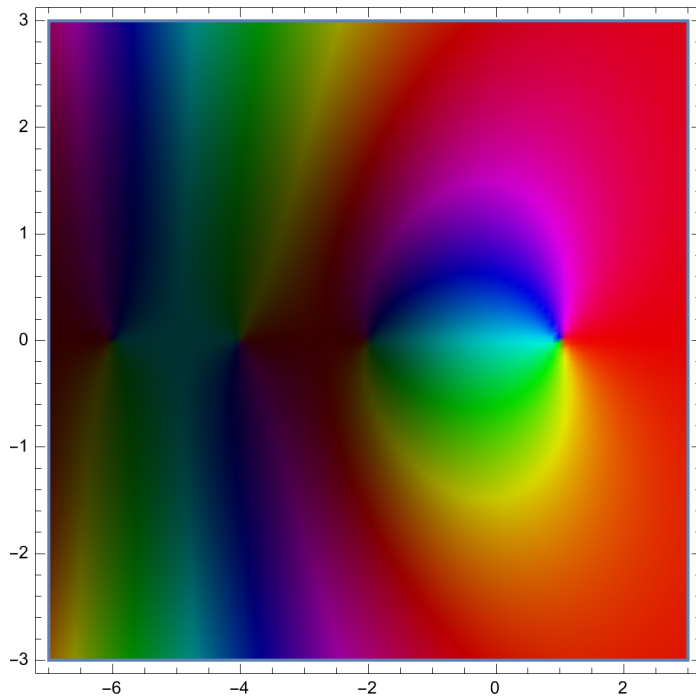
In[ ]:= ComplexGraph[f_, {xmin_, xmax_}, {ymin_, ymax_}, opts : OptionsPattern[]] :=
    |选项模式
    RegionPlot[True, {x, xmin, xmax}, {y, ymin, ymax}, opts, PlotPoints → 100,
    |绘制区域 |真 |绘图点
    ColorFunctionScaling → False, ColorFunction → Function[{x, y}, With[{ff = f[x + I y]},
    |颜色函数缩放 |假 |颜色函数 |纯函数 |With循环 |虚数单位
        Hue[(2. Pi) ^ -1 Mod[Arg[ff], 2 Pi], 1, 1 - (1.2 + 10 Log[Abs[ff] + 1]) ^ -1]]]
        |色相 |圆周率 |模余 |辐角 |圆周率 |对数 |绝对值

```

```
In[ ]:= ComplexGraph[Zeta, {-7, 3}, {-3, 3}]
```

[黎曼ζ函数](#)

```
Out[ ]:=
```



```
In[ ]:= ComplexGraph[Zeta, {-7, 3}, {-3, 3},
```

[黎曼ζ函数](#)

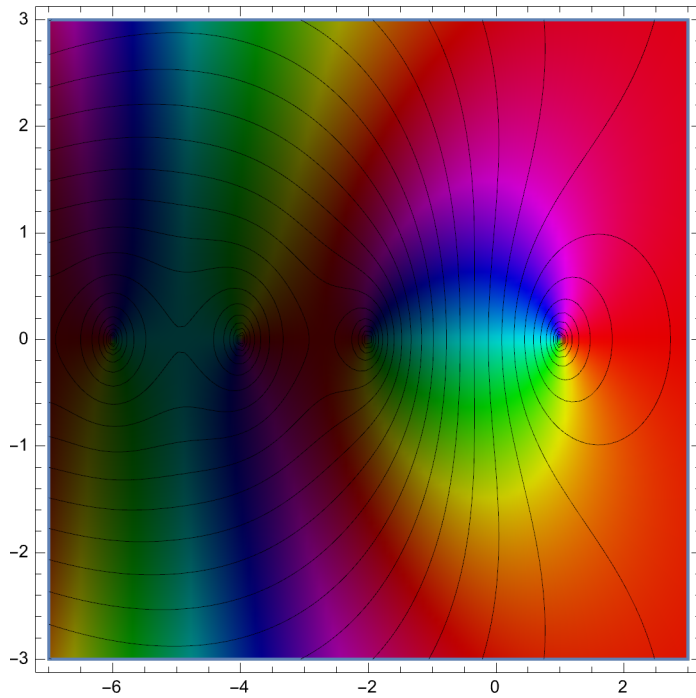
```
Mesh -> 30, MeshFunctions -> {Log[Abs[Zeta[#1 + I #2]]] &},
```

[网格](#) [网格函数](#) [对数](#) [黎曼ζ函数](#) [虚数单位](#)

```
MeshStyle -> {{Thin, Black}, None}, MaxRecursion -> 0]
```

[网格样式](#) [细](#) [黑色](#) [无](#) [最大递归](#)

```
Out[ ]:=
```





```

In[ ]:= Plot3D[
  绘制三维图形
  Log[Abs[Zeta[x + I y]]], {x, -6, 3}, {y, -3, 3},
  对数 [...] 黎曼ζ函数 虚数单位
  (*color and mesh functions don't trigger refinement,so just use a big grid*)
  PlotPoints → 50, MaxRecursion → 0,
  绘图点 最大递归
  Mesh → 50,
  网格
  (*turn off scaling so we can do computations with the actual complex values*)
  ColorFunctionScaling → False,
  颜色函数缩放 假
  ColorFunction → (Hue[
  颜色函数 色相
    (*hue according to argument,with shift so arg(z)==0 is red*)
    Rescale[Arg[Zeta[# + I #2]], {-Pi, Pi}, {0, 1} + 0.5],
    重新调整 辐角 黎曼ζ函数 虚数单位 [...] 圆周率
    1, (*fudge brightness a bit:
      0.1 keeps things from getting too dark,
      2 forces some actual bright areas*)
    Rescale[Log[Abs[Zeta[# + I #2]]], {-Infinity, Infinity}, {0.1, 2}]] &),
    重新调整 对数 [...] 黎曼ζ函数 虚数单位 无穷大 无穷大
    (*mesh lines according to magnitude,scaled to avoid the pole at z=1*)
    MeshFunctions → {Log[Abs[Zeta[#1 + I #2]]] &},
    网格函数 对数 [...] 黎曼ζ函数 虚数单位
    (*turn off axes,because I don't like them with frames*)
    虚数单位
    Axes → False]
  坐标轴 假

```

Out[ ]:=

