# Filled 2-D contour plot

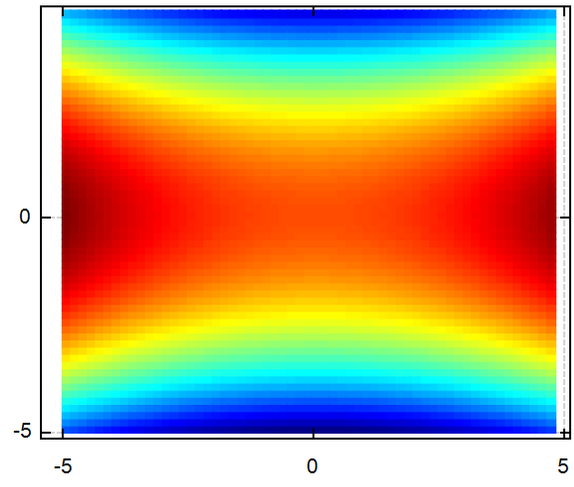
FillContour

$pFillContour(f(x,y),B,N,G)$ plots the filled contour of f in the box B with N1xN2 rectangles with colors in G $B=\begin{bmatrix} x1 & x2 \\ y1 & y2 \end{bmatrix}$ $N=\begin{bmatrix} nx \\ ny \end{bmatrix}$

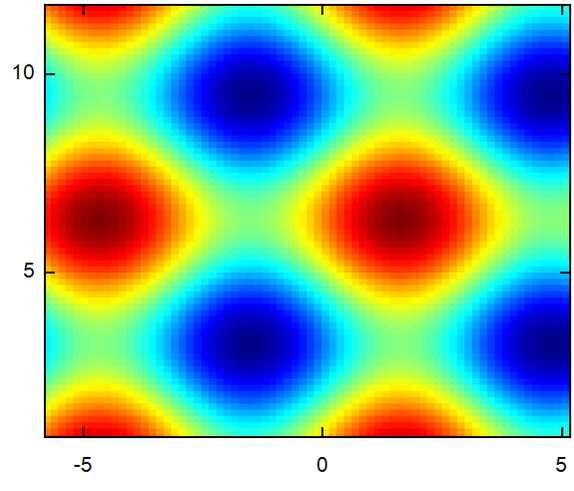
$pCmap(n,a)$ creates a Jet colormap of n colors with a transparency $G:=pCmapJet(200,1)$

## Examples

$$f(x,y):=x^2-4\cdot y^2$$
$$B:=\begin{bmatrix} -5 & 5 \\ -5 & 5 \end{bmatrix}$$
$$N:=\begin{bmatrix} 60 \\ 60 \end{bmatrix}$$
$$FC:=pFillContour(f(x,y),B,N,G)$$

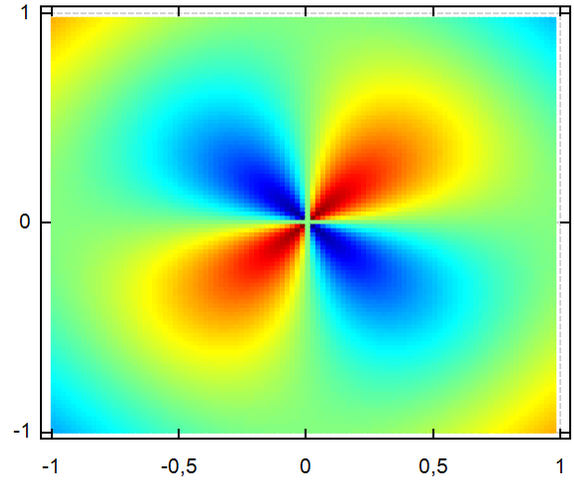



$$f(x,y):=\sin(x)+\cos(y)$$
$$B:=\begin{bmatrix} -2\cdot\pi & 2\cdot\pi \\ 0 & 4\cdot\pi \end{bmatrix}$$
$$N:=\begin{bmatrix} 80 \\ 80 \end{bmatrix}$$
$$FC:=pFillContour(f(x,y),B,N,G)$$




Contour of a polar function z(ρ,φ) = sin(2φ)(1-ρ)

$$f(x,y):=\left|\begin{matrix}[\rho\ \varphi]:=[|x+i\cdot y|\ \operatorname{atan}(y,x)] \\ \sin(2\cdot\varphi)\cdot(1-\rho)\end{matrix}\right.$$
$$B:=\begin{bmatrix} -1 & 1 \\ -1 & 1 \end{bmatrix}$$
$$N:=\begin{bmatrix} 100 \\ 100 \end{bmatrix}$$
$$FC:=pFillContour(f(x,y),B,N,G)$$




*Alvaro*