%function Plot2dHist(mHist2d, vEdgeX, vEdgeY, strLabelX, strLabelY, strTitle)

%Shows 2d histogram in p-color map

%Example

% mYX = rand(10000,2);

% vXEdge = linspace(0,1,100);

% vYEdge = linspace(0,1,200);

% mHist2d = hist2d(mYX,vYEdge,vXEdge);

%

% Plot2dHist(mHist2d, vXEdge, vYEdge, 'X', 'Y', 'Example'); colorbar

function Plot2dHist(mHist2D, vEdgeX, vEdgeY, strLabelX, strLabelY, strTitle)

nEdgeX = length(vEdgeX)-1;

nEdgeY = length(vEdgeY)-1;

rMinX = min(vEdgeX);

rMaxX = max(vEdgeX);

rMinY = min(vEdgeY);

rMaxY = max(vEdgeY);

rDeltaX = (vEdgeX(2)-vEdgeX(1));

rDeltaY = (vEdgeY(2)-vEdgeY(1));

vLabelX = (rMinX+0.5\*rDeltaX):rDeltaX:(rMaxX-0.5\*rDeltaX);

vLabelY = (rMinY+0.5\*rDeltaY):rDeltaY:(rMaxY-0.5\*rDeltaY);

% pcolor (vLabelX, vLabelY, mHist2D);

% surf(vLabelX, vLabelY, mHist2D);

% shading interp;

contour(vLabelX, vLabelY, mHist2D,'LineWidth',1.5,'LevelStep',0.0015);

%colorbar;

grid on;

xlabel(strLabelX);

ylabel(strLabelY);

axis([rMinX, rMaxX, rMinY, rMaxY]);

title(strTitle)