```
n=100;
[x,y]=meshgrid(-n:2:n,-n:2:n);          % the grid points
z1=sin((x-.002*x.*x)/n*5).^2+1;
z2=sin((x+2*y)/n*2).^2+.5;
t1=80;
w1=t1*t1./((x-20).^2+(y-40).^2+t1*t1);
z=z1.*z2.*w1*1000+rand(size(z1))*.1;
%find local maximum
ind_x = 2:n;
ind_y = 2:n;
[xx yy] = find( z(ind_x,ind_y)>z(ind_x+1,ind_y+1)  & ...
                z(ind_x,ind_y)>z(ind_x+1,ind_y)     & ...
                z(ind_x,ind_y)>z(ind_x+1,ind_y-1)   & ...
                z(ind_x,ind_y)>z(ind_x,ind_y+1)     & ...
                z(ind_x,ind_y)>z(ind_x-1,ind_y+1)   & ...
                z(ind_x,ind_y)>z(ind_x-1,ind_y)  & ...
                z(ind_x,ind_y)>z(ind_x-1,ind_y-1)   & ...
                z(ind_x,ind_y)>z(ind_x,ind_y-1))

%get local maximum's coordinate
xxx = -n + 2*xx;
yyy = -n + 2*yy;

%contour plot
figure(1);
contourf(x,y,z,10);
hold on;
plot(yyy,xxx,'^r');
text(yyy,xxx,num2str(round(z(yy*101+xx+1))));
hold off;

%3D plot
figure(2);
mesh(x,y,z);
hold on;
plot3(yyy,xxx,z(yy*101+xx+1),'^r');
text(yyy,xxx,z(yy*101+xx+1),num2str(round(z(yy*101+xx+1))));
hold off;
```