% Surface fit artifact removal  
[x,y] = meshgrid(0:.01:1);  
z0 = exp(x+y);  
  
znan = z0;  
znan(20:50,40:70) = NaN;  
znan(30:90,5:10) = NaN;  
znan(70:75,40:90) = NaN;  
  
z = inpaint\_nans(znan,3);  
  
% Comparison to griddata  
k = isnan(znan);  
zk = griddata(x(~k),y(~k),z(~k),x(k),y(k));  
zg = znan;  
zg(k) = zk;  
  
close all  
figure  
surf(z0)  
title 'Original surface'  
  
figure  
surf(znan)  
title 'Artifacts (large holes) in surface'  
  
figure  
surf(zg)  
title(['Griddata inpainting (',num2str(sum(isnan(zg(:)))),' NaNs remain)'])  
  
figure  
surf(z)  
title 'Inpainted surface'  
  
figure  
surf(zg-z0)  
title 'Griddata error surface'  
  
figure  
surf(z-z0)  
title 'Inpainting error surface (Note z-axis scale)'

     

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