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Animated plot with trajectory points

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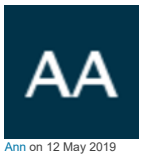

Ann on 12 May 2019

Commented: Ann on 13 May 2019

Accepted Answer: Sulaymon Eshkabilov

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Hey,
I have a problem with an animated plot. I have two vectors X and Y. They have the same lengths and describe displacement of particle in x and y direction. I would like to plot an animation in order to show the Brownian motion of a particle. I have used a code found here: https://www.mathworks.com/help/matlab/ref/animatedline.html. The problem is that it only works if y is a function, for instance y = sin(x). I also used plot function and it only shows the moving point. I would like to plot a trajectory using x and y data points. Is there anyone who knows how to do it and would be so nice to help me?
This is how my code looks like:

```
x =
[0.829848791287224;0.948370872838282;0.989452821303060;0.996024855335383;1;0.969369687549902;0.777472060032697;0.542272394635493;0.303269777962775;0.261866149221235;0.449096037776645;0.342
y =
[0.786715362478319;0.807735700665893;0.792037976460206;0.767568910766359;0.748967197199836;0.789931528242810;0.799466207107378;0.764263916683651;0.749928950660036;0.623191339216798;0.4710
curve = animatedline('Color', 'b', 'LineStyle', '-', 'LineWidth',3);
set(gca, 'XLim', [0 1], 'YLim', [0 1]);
grid on;
for i = 1:length(x)
% addpoints(curve, x(i), y(i));
plot(x(i), y(i), '-b')
drawnow
end
```

Thank you for your help.
Kind Regards
Ann

0 Comments

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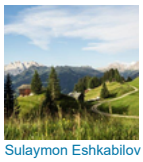
Accepted Answer



Sulaymon Eshkabilov on 13 May 2019

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Link

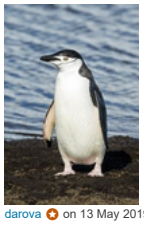
Hi,
You have almost done all the work except for some small points. Here is the finalized one:

```
x =
[0.829848791287224;0.948370872838282;0.989452821303060;0.996024855335383;1;0.969369687549902;0.777472060032697;0.542272394635493;0.303269777962775;0.261866149221235;0.44909603777664
5;0.342339750593142;0.504837452260772;0.449109692828380;0.247277691338249;0.365412415382128;0.252188006905490;0.272147375214313;0.440129799125733;0.426260245776882;0.355887430155556
1;0.291149918872756;0.405235503759262;0.502506627500109;0.377850764292477;0.356932635731755;0.346095667999794;0.447465313710477;0.443817170404488;0.438680633046618;0.395574383902766
;0.496781871809609;0.419365352164421;0.353852060794176;0.570399700097915;0.489108097147449;0.443857779245358;0.374099544188009;0.483521135410798;0.425585289444380;0.329356516261867];
y =
[0.786715362478319;0.807735700665893;0.792037976460206;0.767568910766359;0.748967197199836;0.789931528242810;0.799466207107378;0.764263916683651;0.749928950660036;0.623191339216798;
0.471091005010575;0.553053151853275;0.371960939525172;0.645945059477088;0.550268151713167;0.559008326538745;0.558128471197608;0.431157919333808;0.486659202095650;0.307524406245544;0
.415792667244793;0.558497859524983;0.654623921193199;0.468670379038440;0.493516697294893;0.299038897262837;0.326864959815376;0.267842627532650;0.501136765022152;0.533613993461779;0.
346199723430800;0.555933405488048;0.383769125847753;0.312403419394111;0.403308990402350;0.391980211566912;0.489621684154288;0.425101013176526;0.393683406459521;1;0.690016448809313];
for i = 1:length(x)
plot(x(i), y(i), 'o', 'markersize', 9), hold all
drawnow, pause(.5)
end
set(gca, 'XLim', [0 1], 'YLim', [0 1]); grid on
```

Good luck.

2 Comments

MATLAB Answers



darova on 13 May 2019

I would add:

```
axis([min(x) max(x) min(y) max(y)]*1.1)
```

Ann on 13 May 2019

OP

Thank you all! It works perfectly :)

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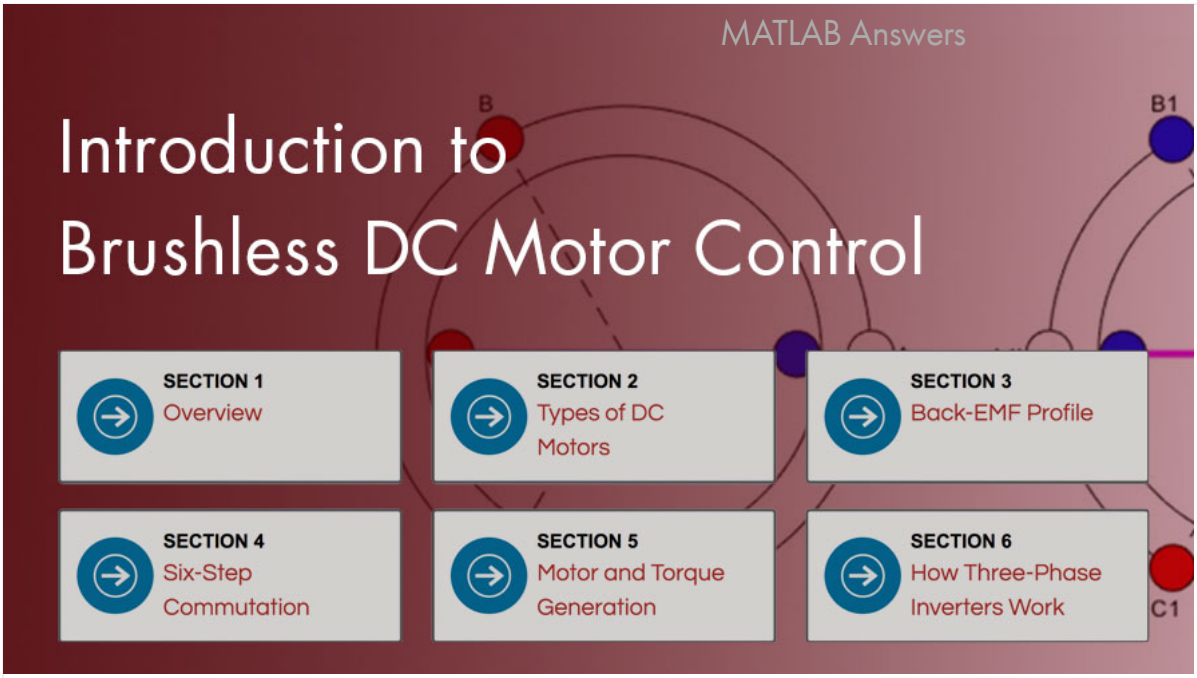

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