

```
% Q1
clc
clear
l=[0.05 0.1 0.5 0.9];
```

```
l = 1×4
    0.0500    0.1000    0.5000    0.9000
```

```
% for config 1
l1=l(1)
```

```
l1 = 0.0500
```

```
q= @(l2) (((20*100*100*10*10*l1*l1*l2*l2)/(10*10*l2*l2 + 100*100*l1*l1)).^0.5);
fplot(q,[0 1],LineWidth=2);
```

Warning: Function behaves unexpectedly on array inputs. To improve performance, properly vectorize your function to return an output with the same size and shape as the input arguments.

```
hold on
l1=l(2);
q= @(l2) (((20*100*100*10*10*l1*l1*l2*l2)/(10*10*l2*l2 + 100*100*l1*l1)).^0.5);
fplot(q,[0 1],LineWidth=2);
```

Warning: Function behaves unexpectedly on array inputs. To improve performance, properly vectorize your function to return an output with the same size and shape as the input arguments.

```
l1=l(3);
q= @(l2) (((20*100*100*10*10*l1*l1*l2*l2)/(10*10*l2*l2 + 100*100*l1*l1)).^0.5);
fplot(q,[0 1], '-.', LineWidth=2);
```

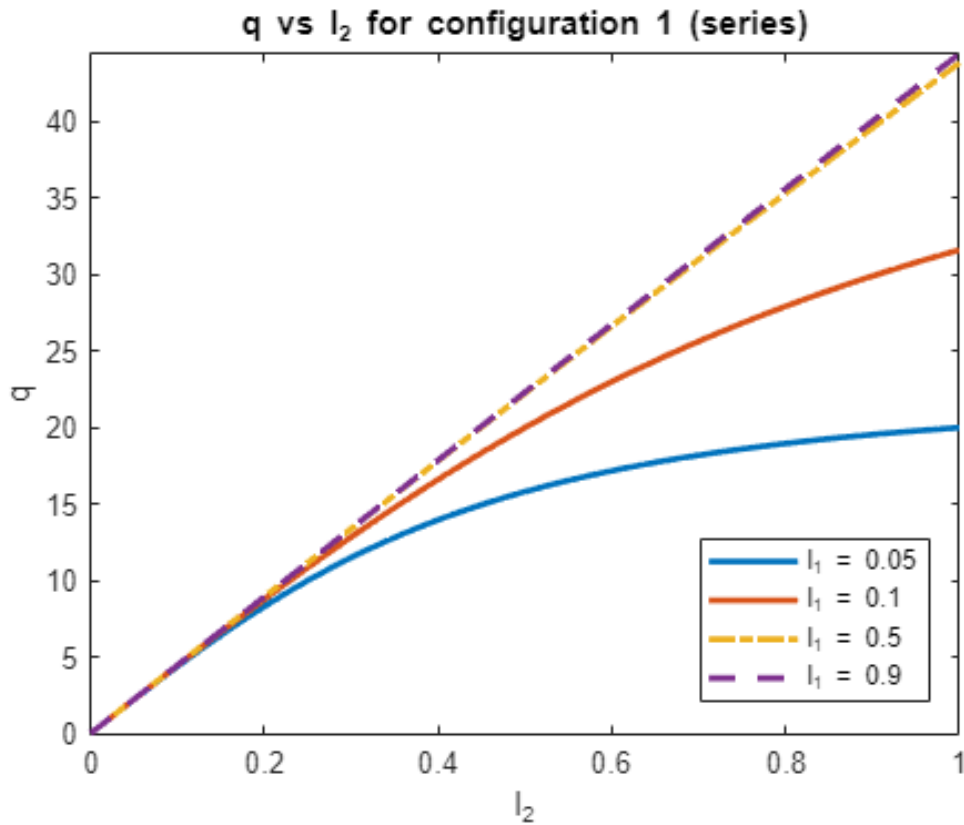
Warning: Function behaves unexpectedly on array inputs. To improve performance, properly vectorize your function to return an output with the same size and shape as the input arguments.

```
l1=l(4);
q= @(l2) (((20*100*100*10*10*l1*l1*l2*l2)/(10*10*l2*l2 + 100*100*l1*l1)).^0.5);
fplot(q,[0 1], '--', LineWidth=2);
```

Warning: Function behaves unexpectedly on array inputs. To improve performance, properly vectorize your function to return an output with the same size and shape as the input arguments.

```
hold off
```

```
title('q vs l_2 for configuration 1 (series)')
xlabel('l_2')
ylabel('q')
legend('l_1 = 0.05', 'l_1 = 0.1', 'l_1 = 0.5', 'l_1 = 0.9', Location='best')
```



```
% for config 2
l1=l(1);
q=@(l2) (100*sqrt(20)*l1+10*sqrt(20)*l2);
fplot(q,[0 1],LineWidth=2);
hold on
l1=l(2);
q=@(l2) (100*sqrt(20)*l1+10*sqrt(20)*l2);
fplot(q,[0 1],LineWidth=2);
l1=l(3);
q=@(l2) (100*sqrt(20)*l1+10*sqrt(20)*l2);
fplot(q,[0 1],LineWidth=2);
l1=l(4);
q=@(l2) (100*sqrt(20)*l1+10*sqrt(20)*l2);
fplot(q,[0 1],LineWidth=2);
hold off

title('q vs l_2 for configuration 2 (parallel)')
xlabel('l_2')
ylabel('q')
legend('l_1 = 0.05','l_1 = 0.1','l_1 = 0.5','l_1 = 0.9',Location='best')
```

