Contents

- Reset
- Script

Called Functions

- MyPosIC

Reset

The following was used while debugging.

```
close all;
clear all;
clc;
```

Script

The following is the main script.

```
t2_0 = 0;                       % Theta 2 initial (rad)

t3_0 = 0;                       % Theta 3 initial (rad) [GUESS]
t4_0 = 0;                       % Theta 4 initial (rad) [GUESS]
x_0 = [t3_0, t4_0];

minimize = @(test_x) MyPosIC(t2_0, test_x);
x = fminsearch(minimize, x_0);
```

Published with MATLAB® R2017a

Contents

- Set Values
- Solved Values


```
function [E] = MyPosIC(t_2, x)
```

Set Values

The following is used to easily change the lengths of the vectors. (A Grashof mechanism has the constraint R1 + R2 <= R3 + R4).

```
r_1 = 2;                        % Length of vector R1 (m)
r_2 = 4;                        % Length of vector R2 (m)
r_3 = 6;                        % Length of vector R3 (m)
r_4 = 8;                        % Length of vector R4 (m)
```

Solved Values

See attached file for hand calculations.

```
% Easy access to...
t_3 = x(1);                     % Theta 3 (rad)
t_4 = x(2);                     % Theta 4 (rad)

% Find the Error
e_x = r_1 + r_4*cos(t_4) - r_2*cos(t_2) - r_3*cos(t_3);
e_y = r_4*sin(t_4) - r_2*sin(t_2) - r_3*sin(t_3);
E = hypot(e_x, e_y);
```

```
end
```

Published with MATLAB® R2017a