

Arch Definition Thrust Line Mechanism

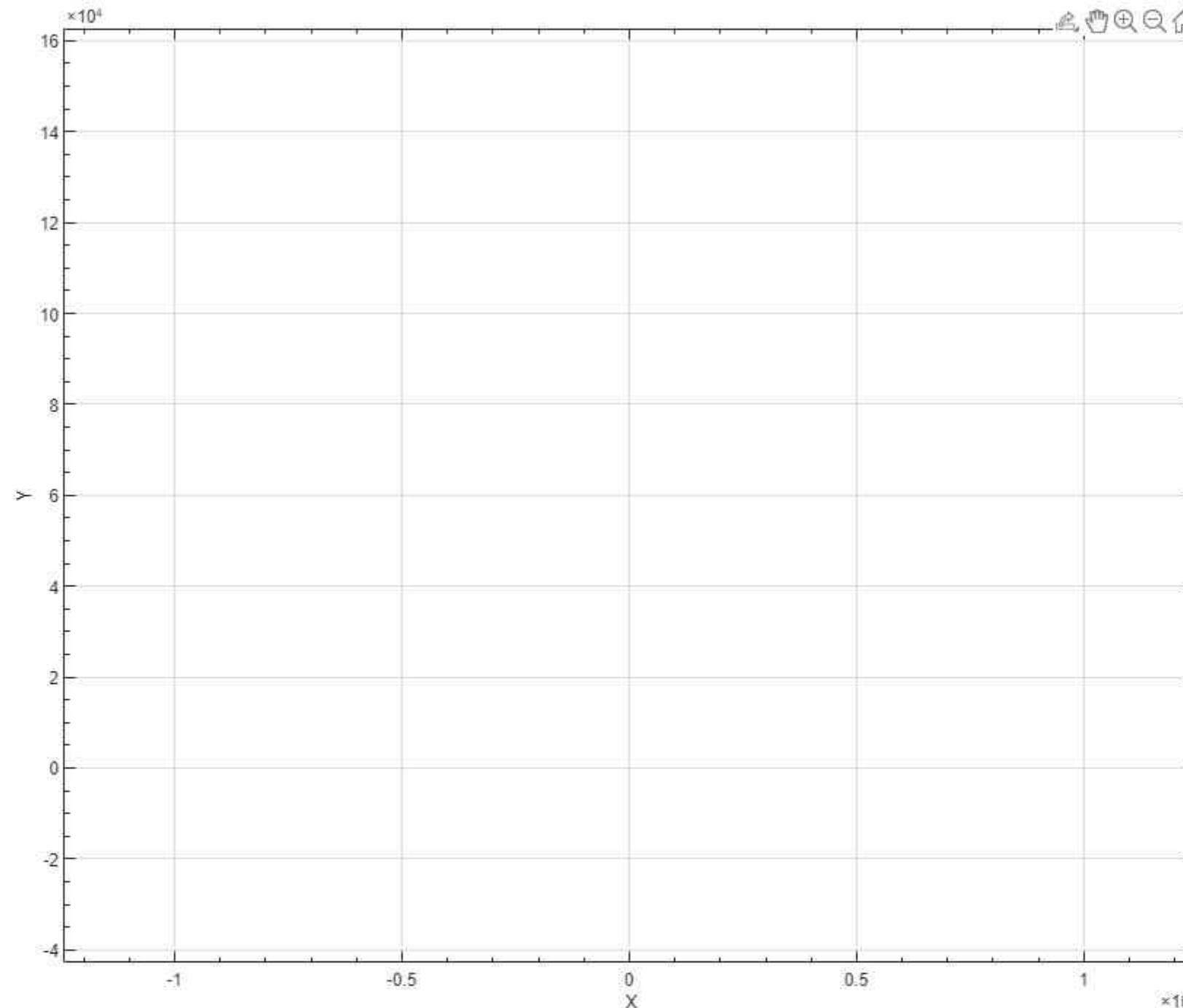
Arch definition
 by Blocks Circular by Sketch Lo >

Inner radius: 100

Outer radius: 120

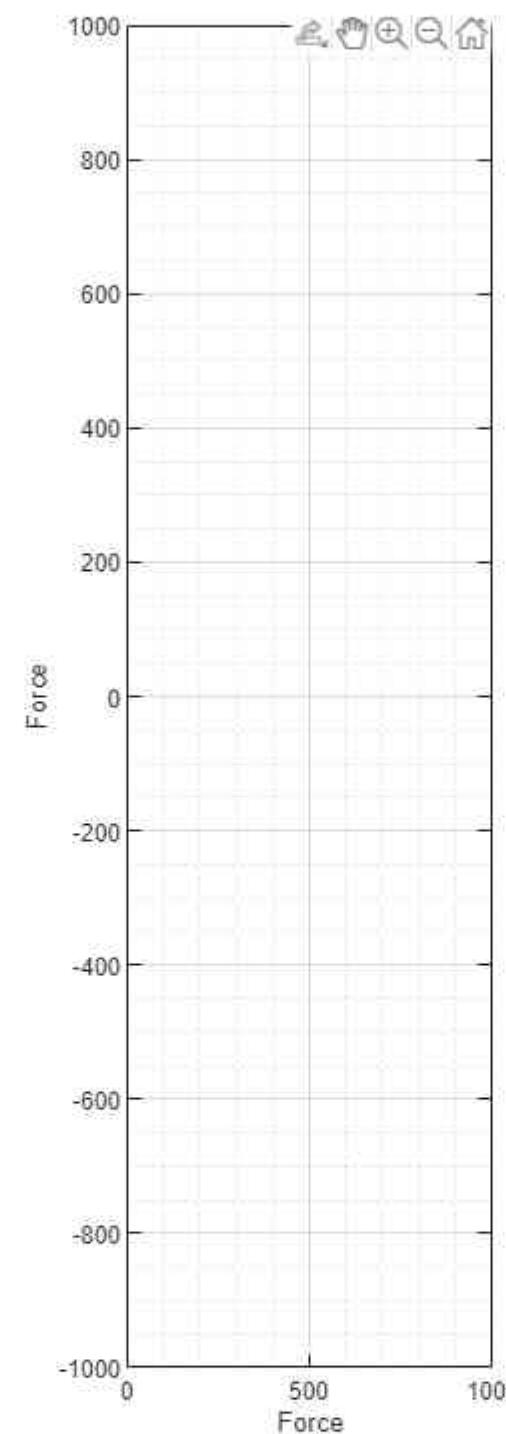
N. of Blocks: 15

Angle (deg): 180

Interactive Area
 Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale
**Block data**

N.	Area	Weight	Xg
1	457.4057	4.5741e+03	9.5505e+
2	457.4057	4.5741e+03	8.2025e+
3	457.4057	4.5741e+03	6.4982e+
4	457.4057	4.5741e+03	4.5121e+
5	457.4057	4.5741e+03	2.3310e+
6	457.4057	4.5741e+03	502.58
7	457.4057	4.5741e+03	-2.2305e+
8	457.4057	4.5741e+03	-4.4116e+
9	457.4057	4.5741e+03	-6.3977e+
10	457.4057	4.5741e+03	-8.1019e+
11	457.4057	4.5741e+03	-9.4499e+
12	457.4057	4.5741e+03	-1.0383e+
13	457.4057	4.5741e+03	-1.0880e+

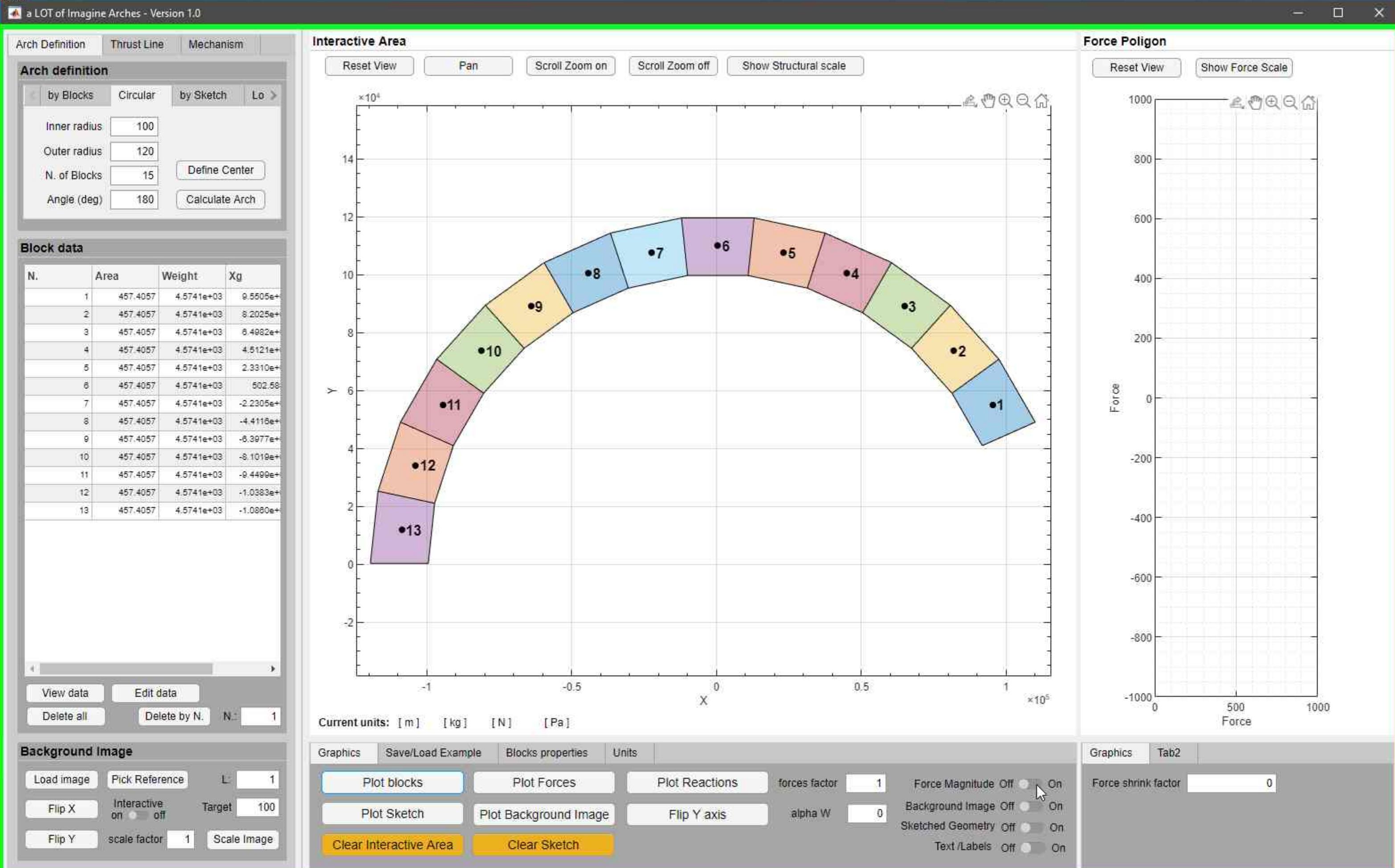
 View data Edit data

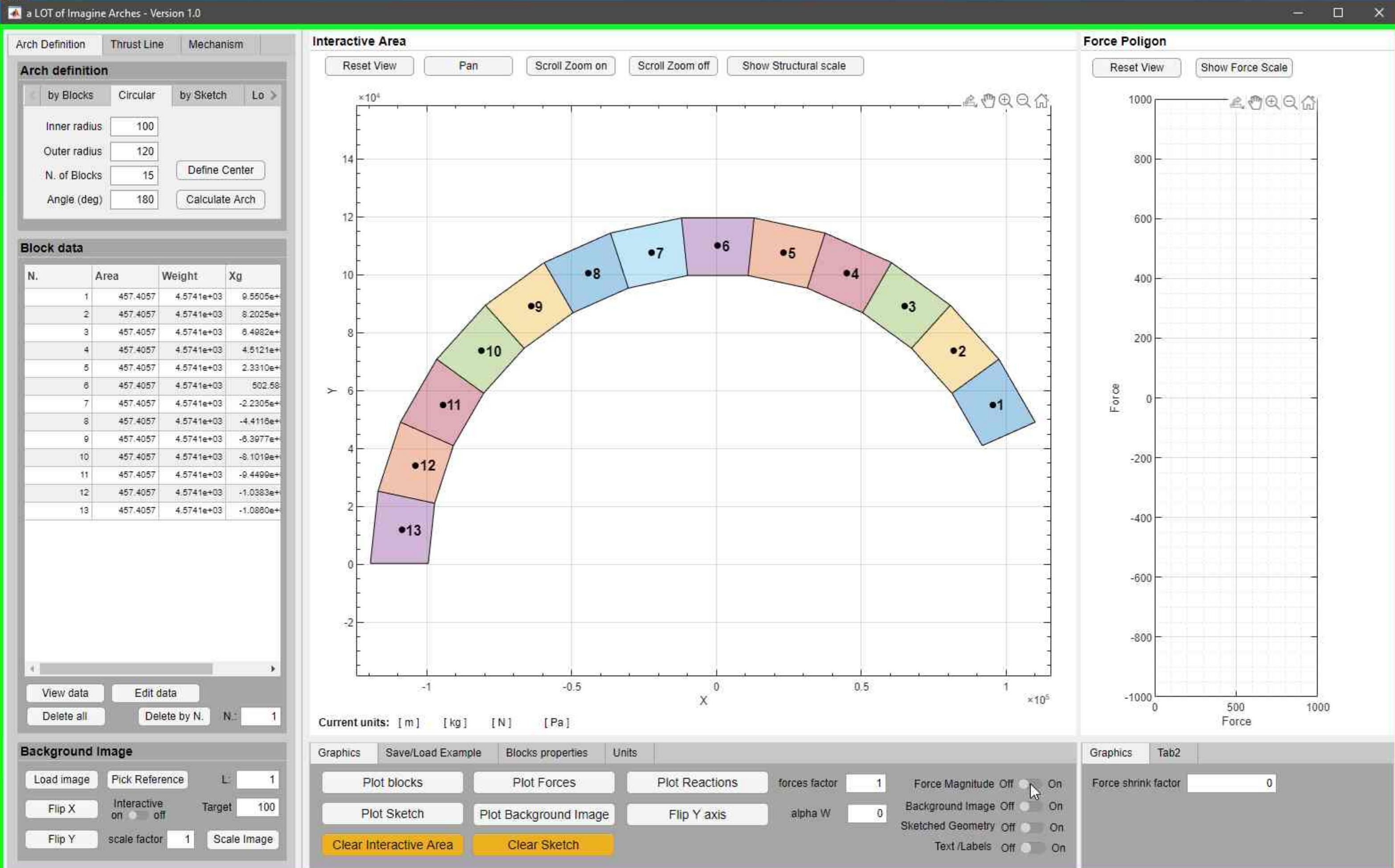
 Delete all Delete by N. N: 1
Background Image
 Load image Pick Reference L: 1
 Flip X Interactive on: off Target: 100
 Flip Y scale factor: 1 Scale Image
Force Polygon
 Reset View Show Force Scale

 Graphics Save/Load Example Blocks properties Units

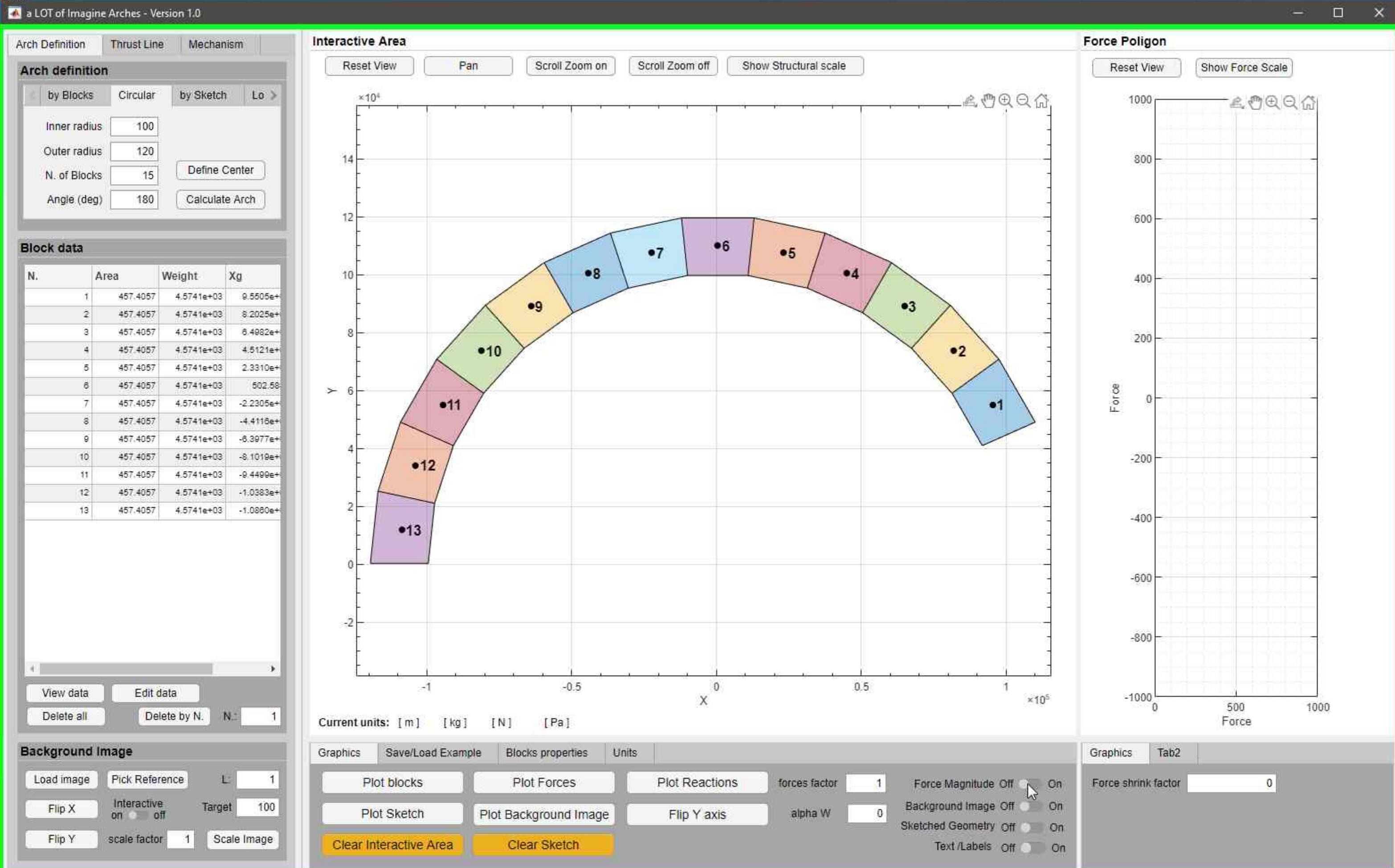
 Plot blocks Plot Forces Plot Reactions forces factor: 1 Force Magnitude Off: On
 Plot Sketch Plot Background Image Flip Y axis alpha W: 0 Background Image Off: On
 Clear Interactive Area Clear Sketch Sketched Geometry Off: On
 Text / Labels Off: On

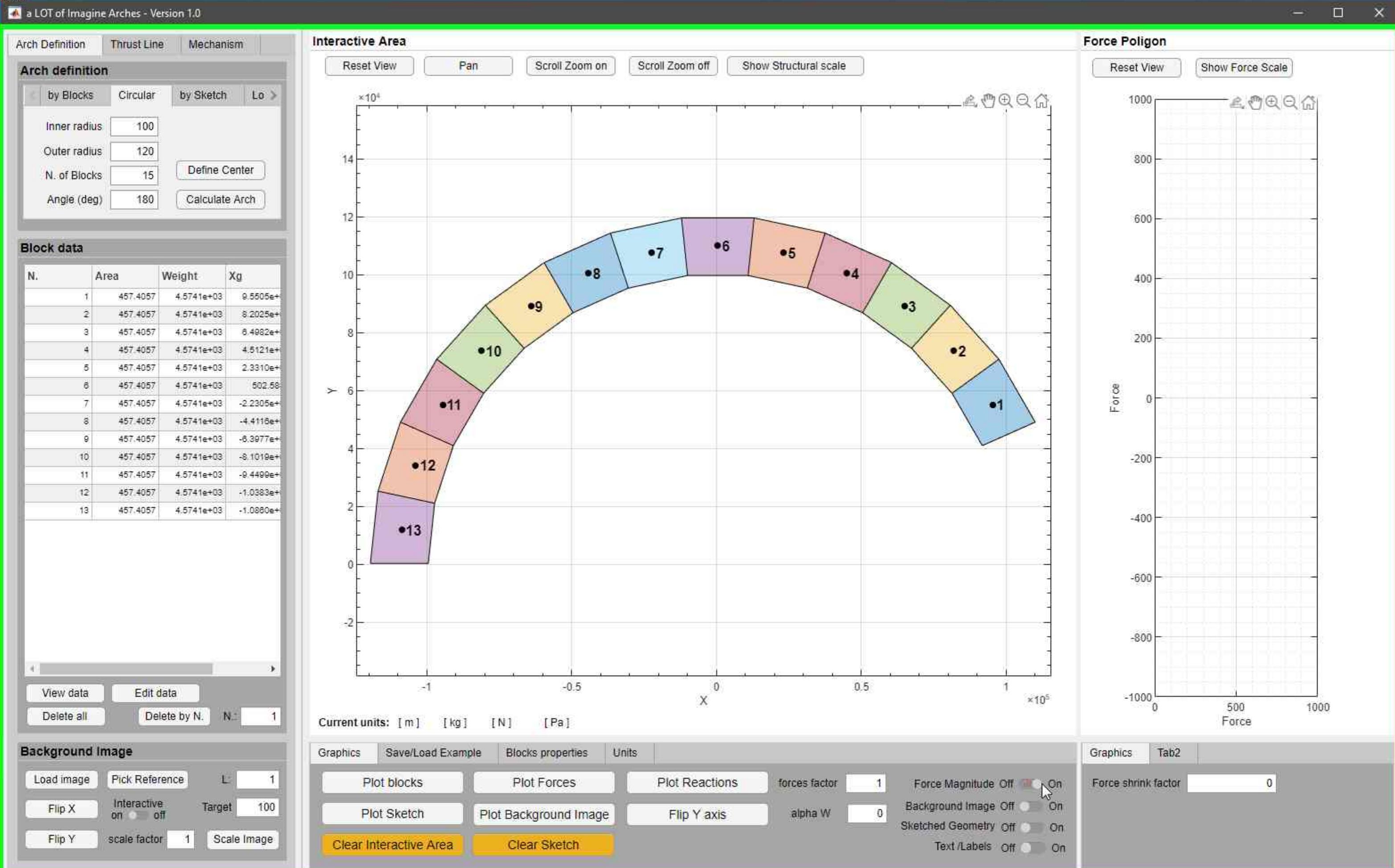
 Graphics Tab2

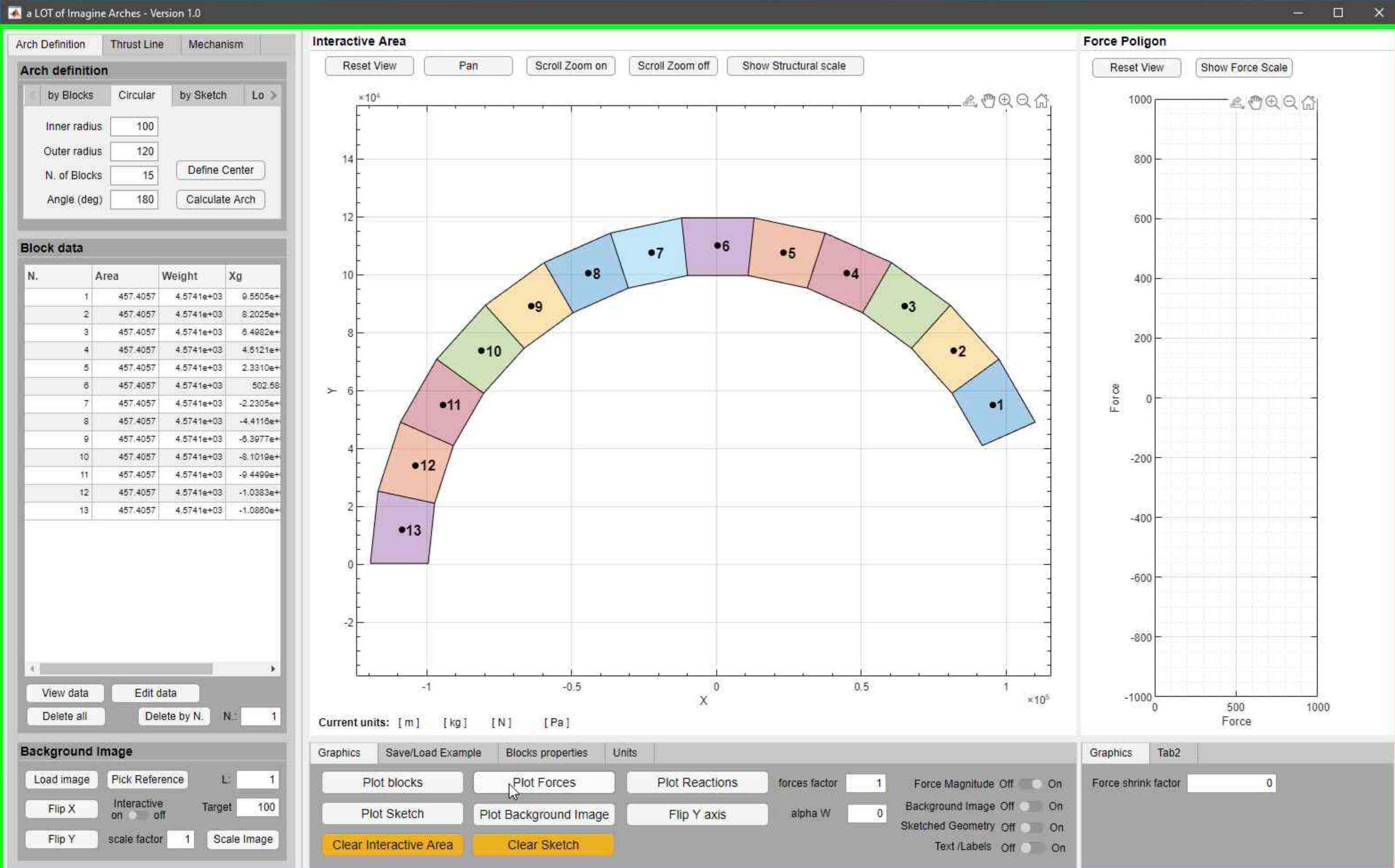
 Force shrink factor: 0

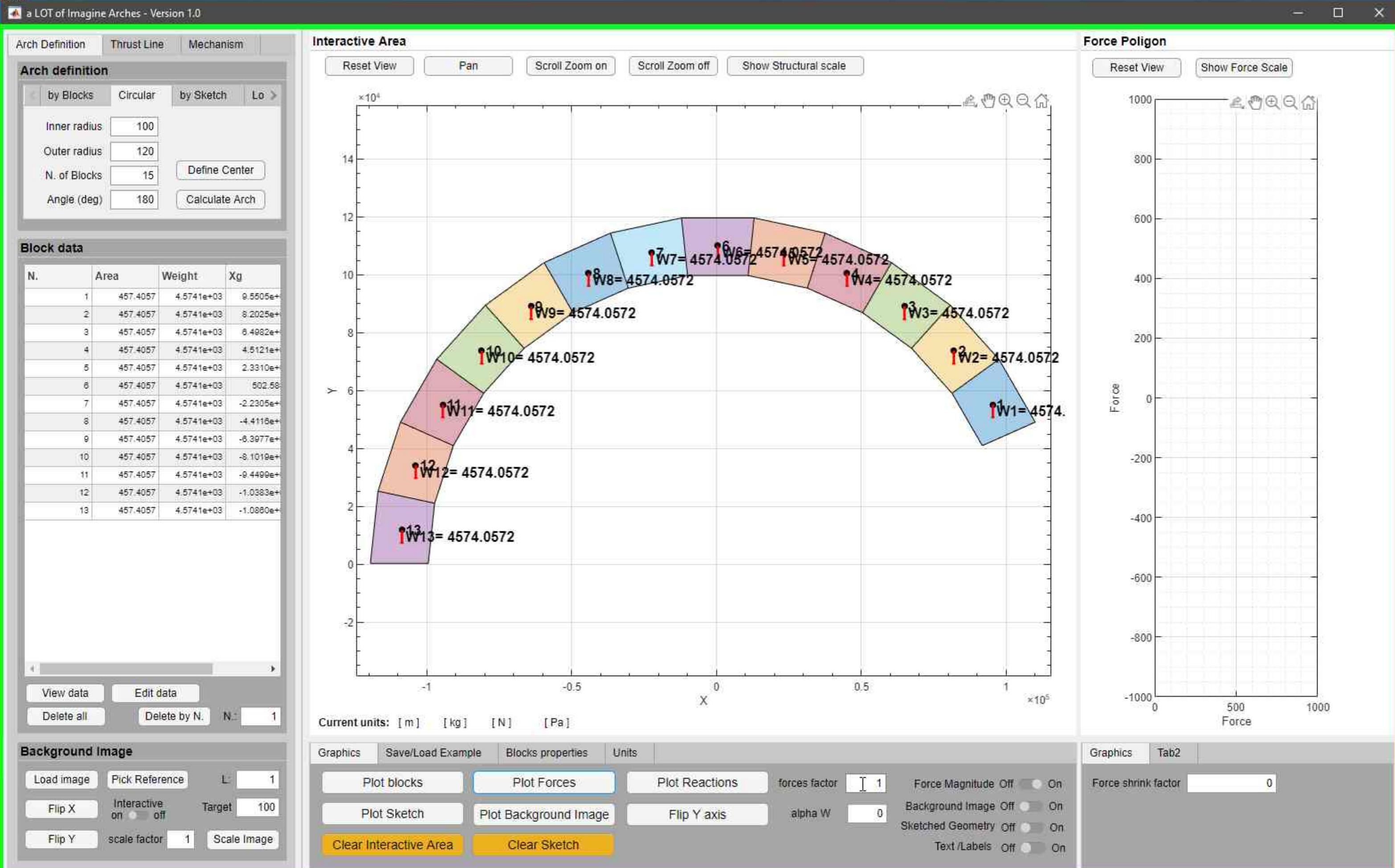


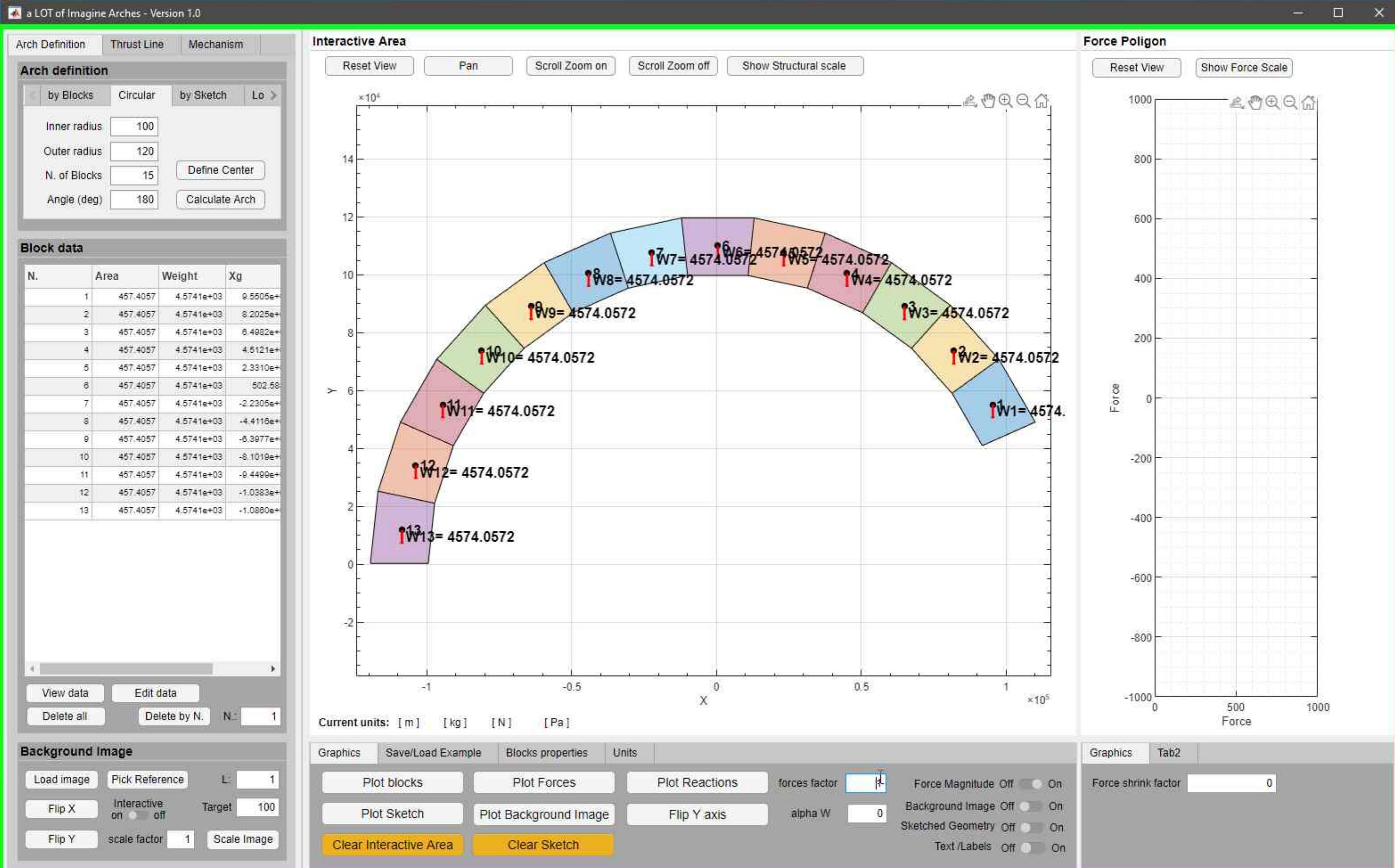


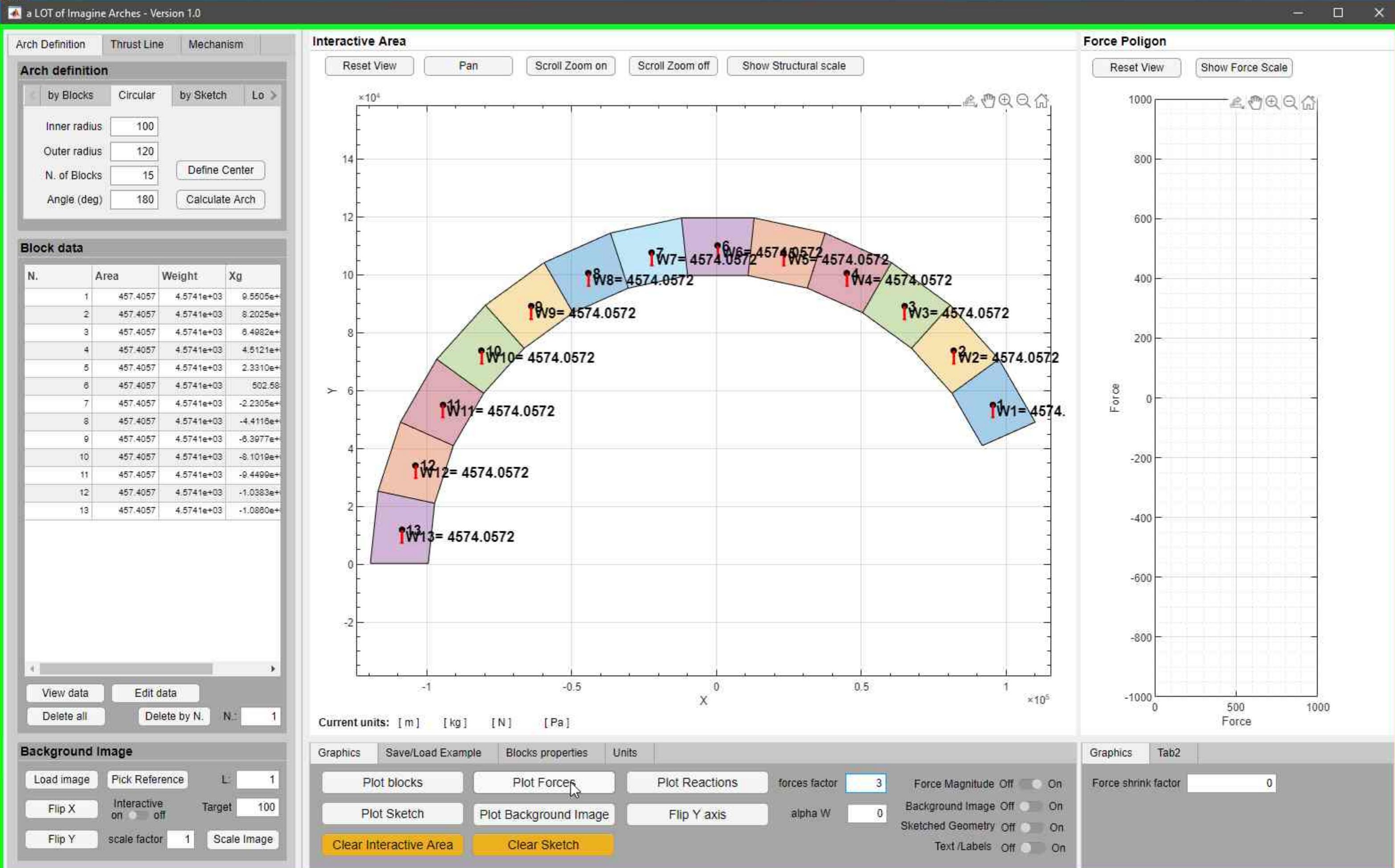


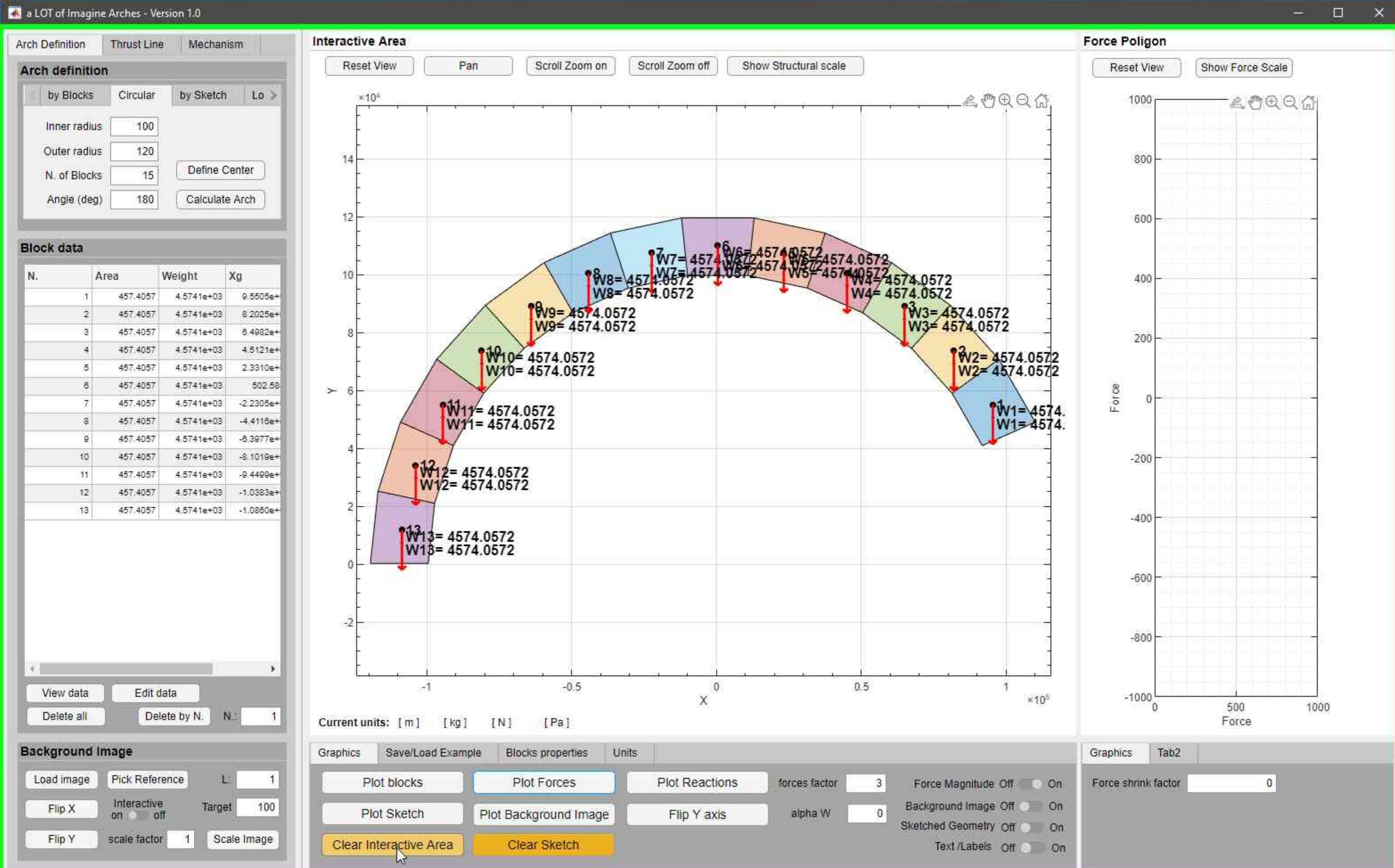












Arch Definition Thrust Line Mechanism

Arch definition

by Blocks Circular by Sketch Lo >

Inner radius: 100

Outer radius: 120

N. of Blocks: 15

Angle (deg): 180

Define Center

Calculate Arch

Block data

N.	Area	Weight	Xg
1	457.4057	4.5741e+03	9.5505e+
2	457.4057	4.5741e+03	8.2025e+
3	457.4057	4.5741e+03	6.4982e+
4	457.4057	4.5741e+03	4.5121e+
5	457.4057	4.5741e+03	2.3310e+
6	457.4057	4.5741e+03	502.58
7	457.4057	4.5741e+03	-2.2305e+
8	457.4057	4.5741e+03	-4.4116e+
9	457.4057	4.5741e+03	-6.3977e+
10	457.4057	4.5741e+03	-8.1019e+
11	457.4057	4.5741e+03	-9.4499e+
12	457.4057	4.5741e+03	-1.0383e+
13	457.4057	4.5741e+03	-1.0880e+

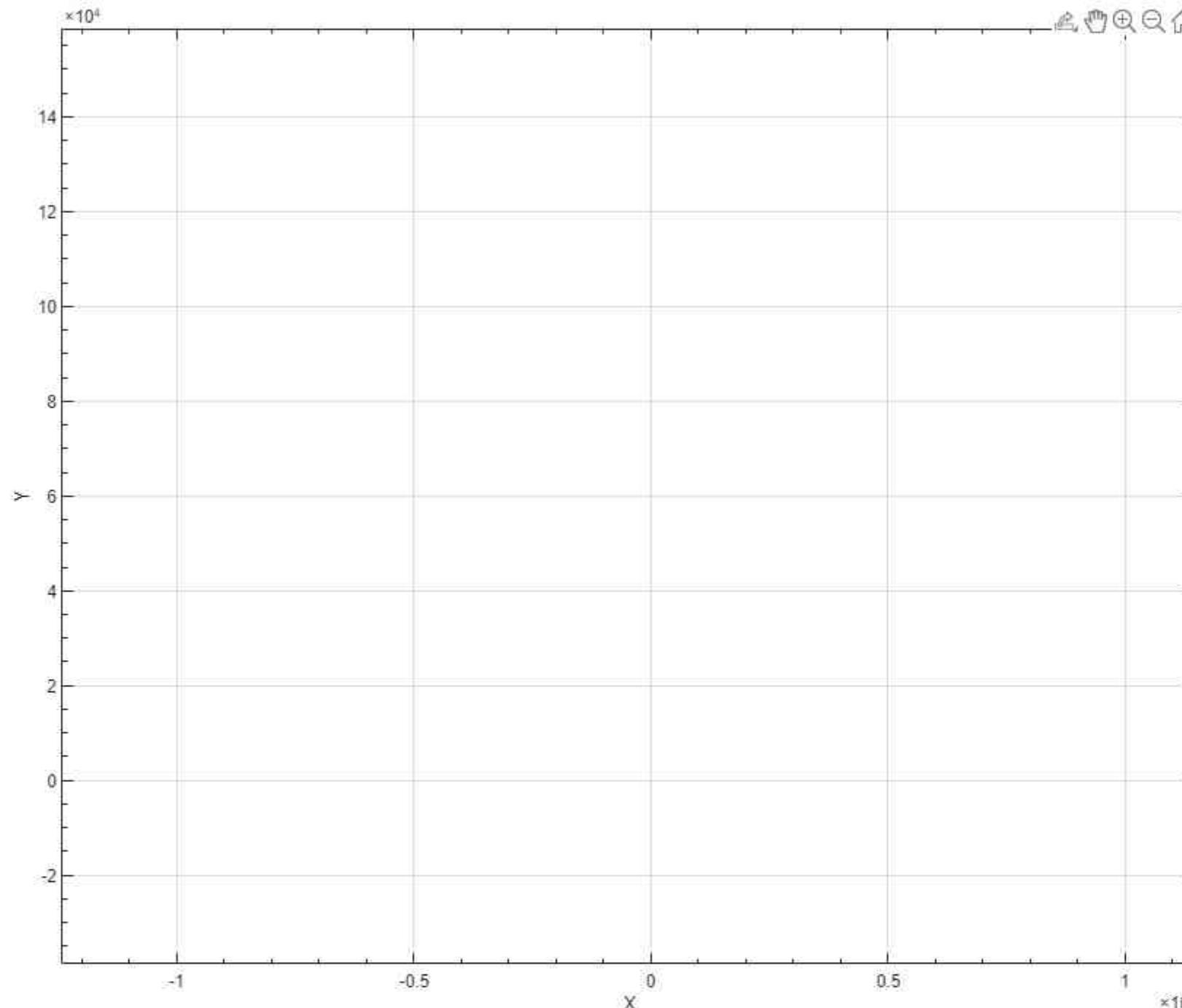
View data Edit data
Delete all Delete by N. N: 1

Background Image

Load image Pick Reference L: 1
Flip X Interactive on off Target: 100
Flip Y scale factor: 1 Scale Image

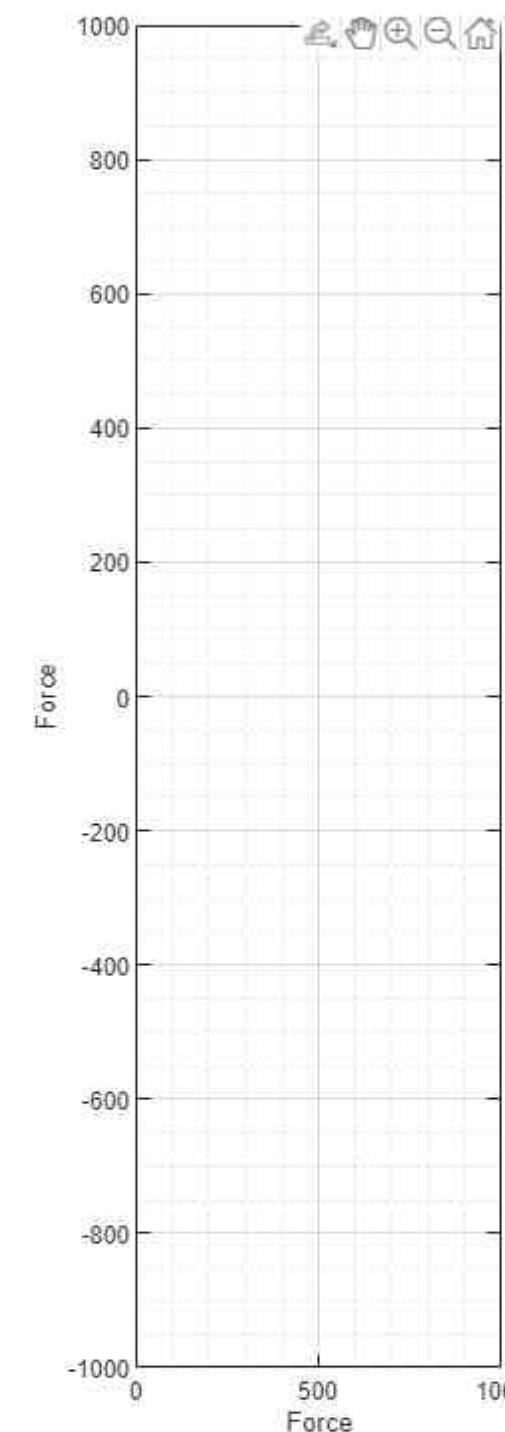
Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Force Polygon

Reset View Show Force Scale

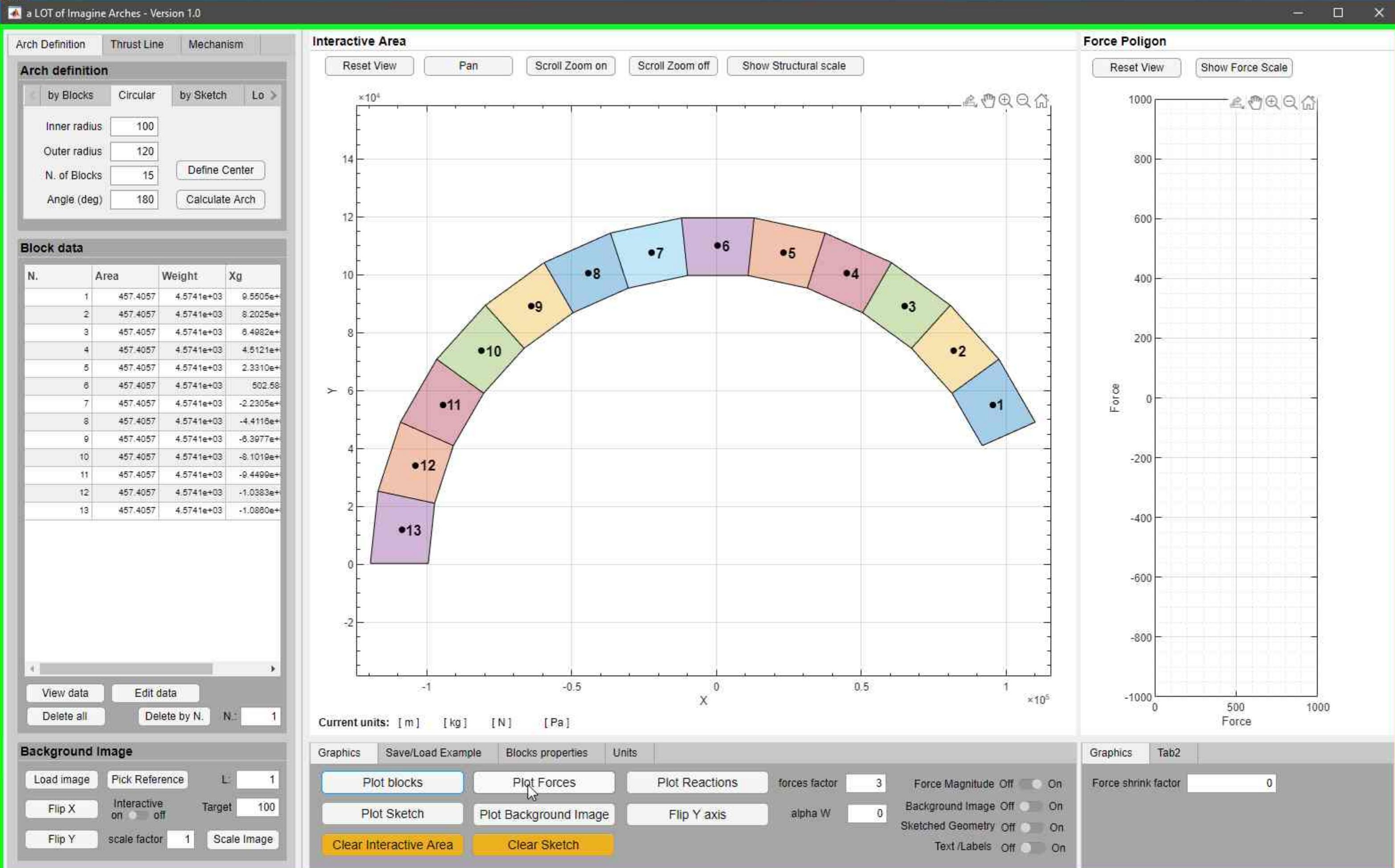


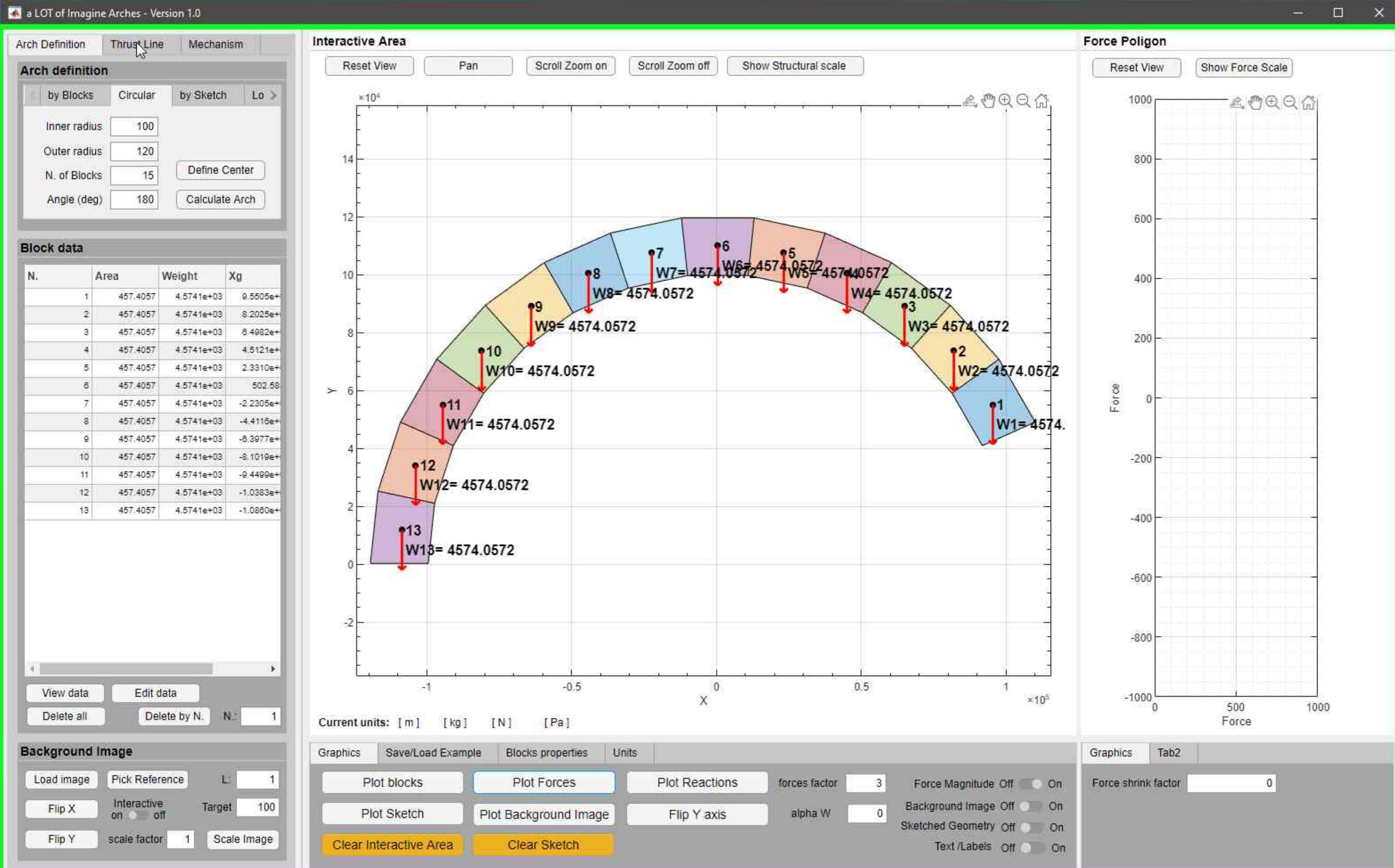
Graphics Save/Load Example Blocks properties Units

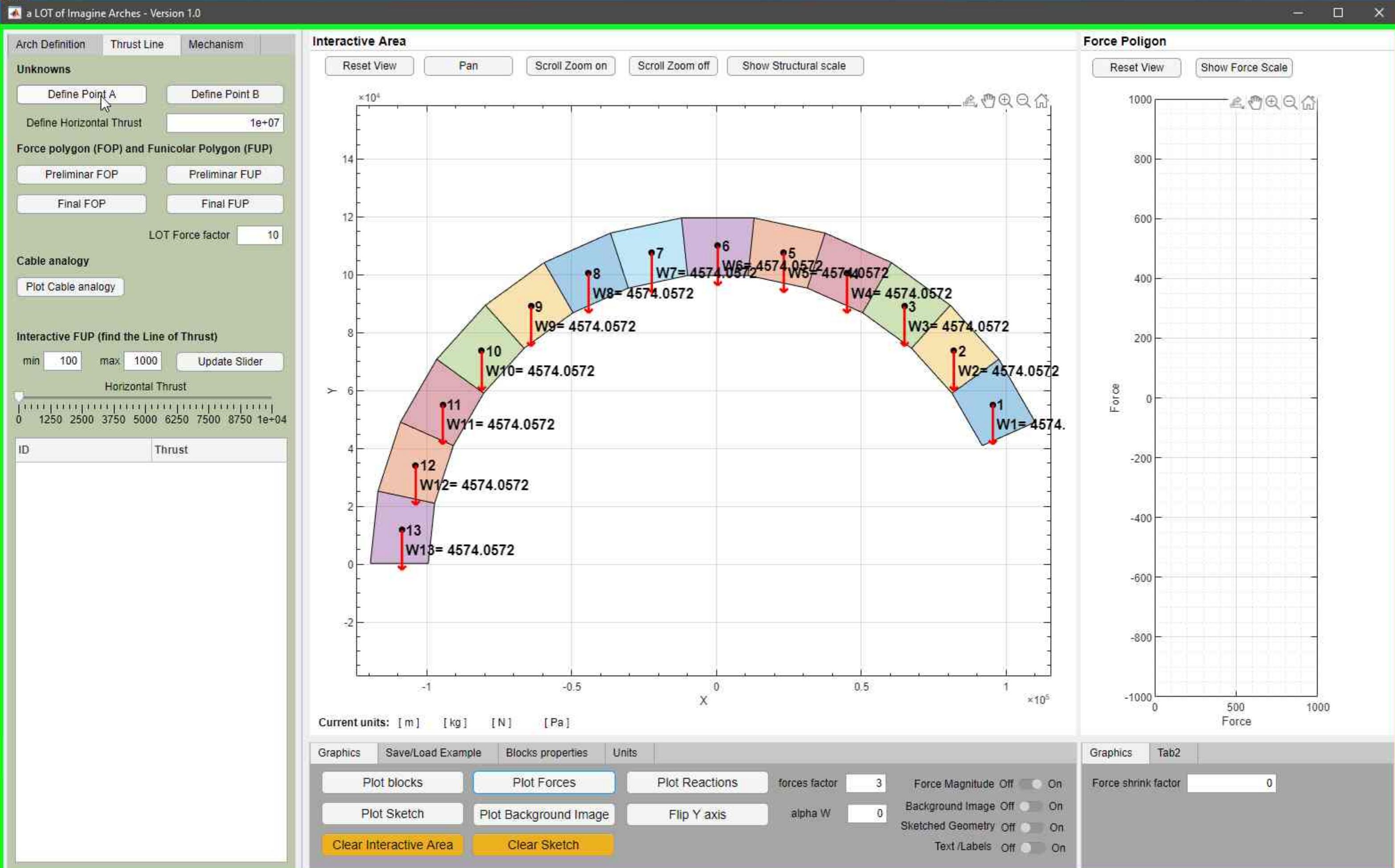
Plot blocks Plot Forces Plot Reactions forces factor: 3 Force Magnitude Off: On
Plot Sketch Plot Background Image Flip Y axis alpha W: 0 Background Image Off: On
Clear Interactive Area Clear Sketch Sketched Geometry Off: On
Text / Labels Off: On

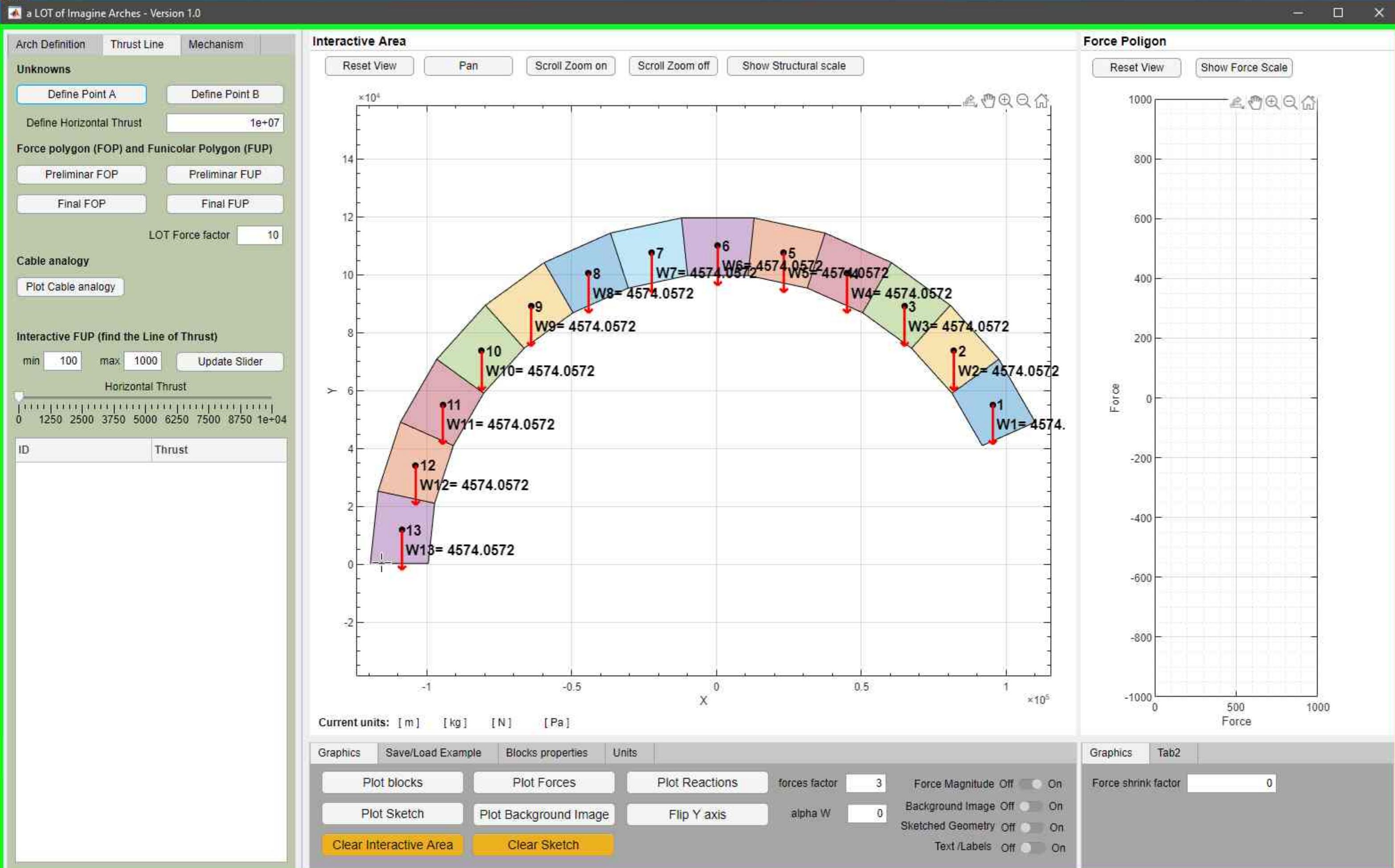
Graphics Tab2

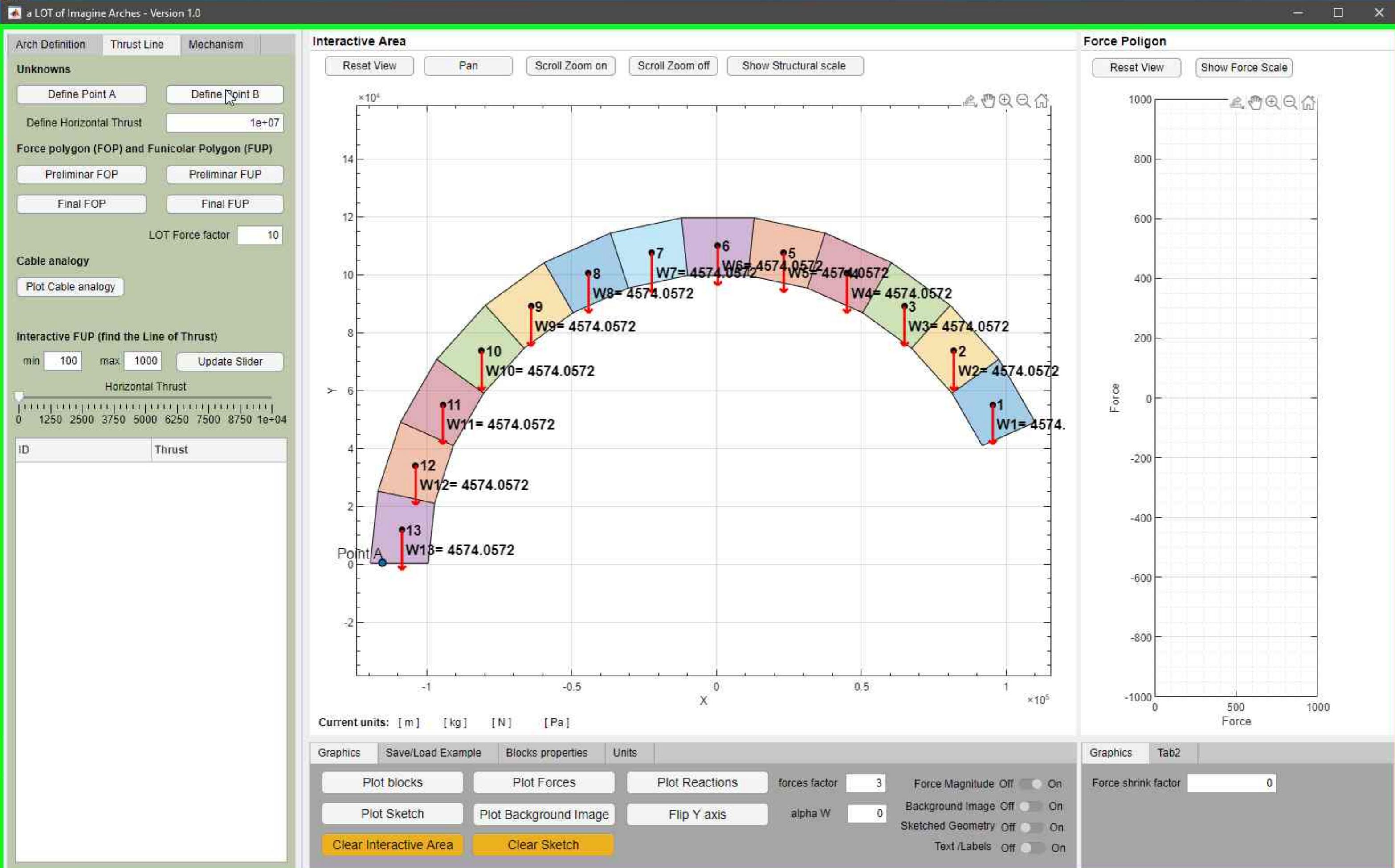
Force shrink factor: 0

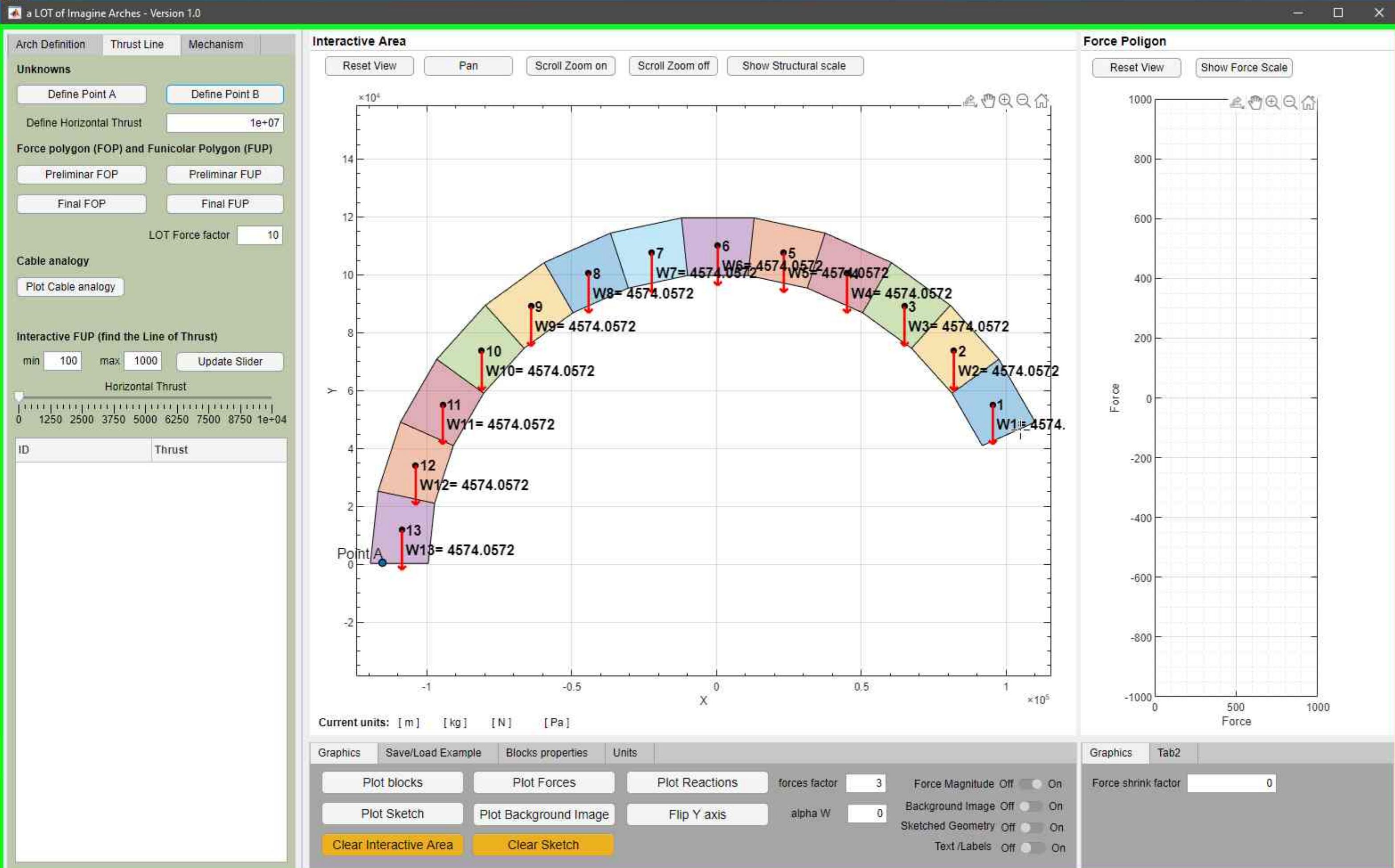


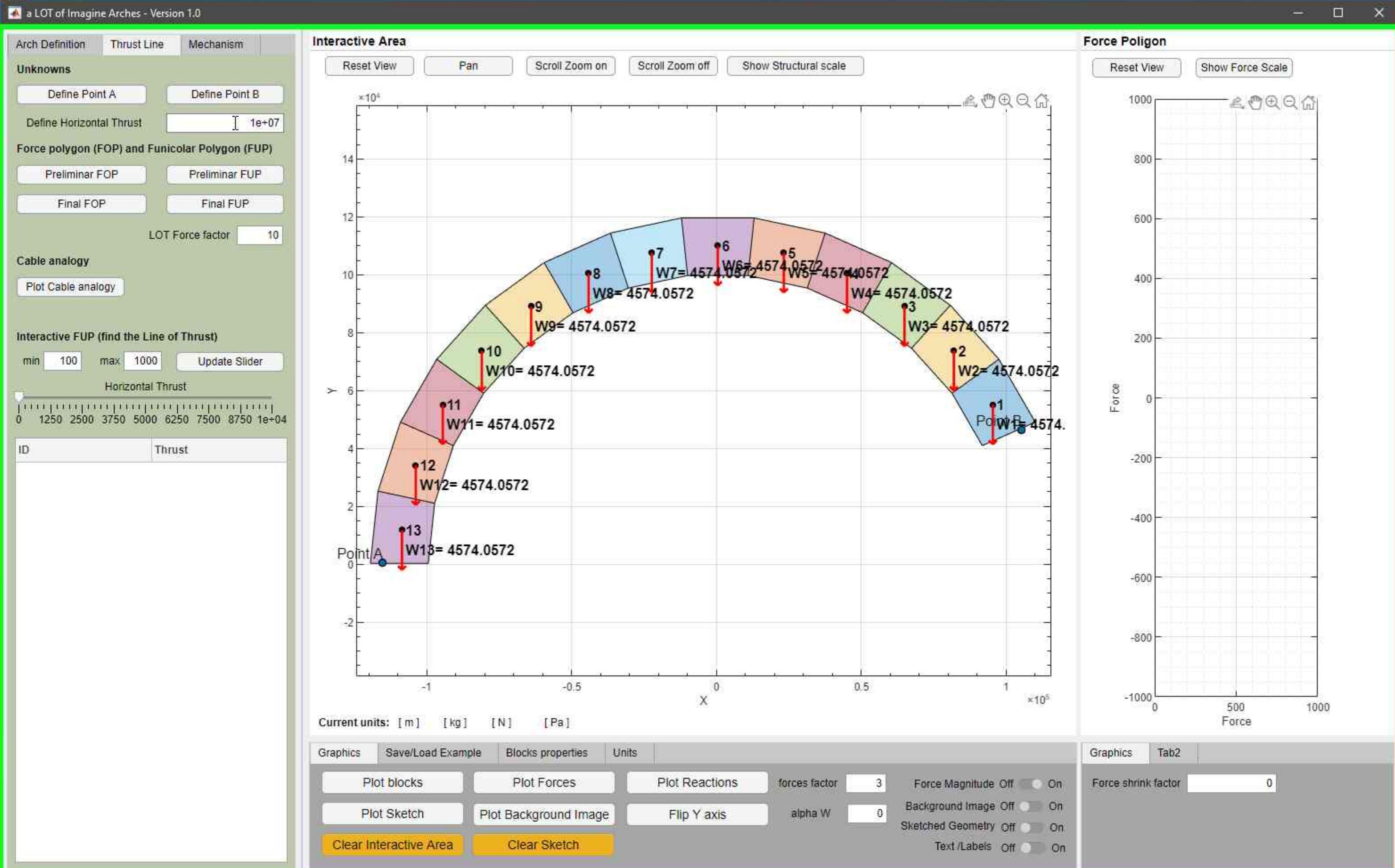


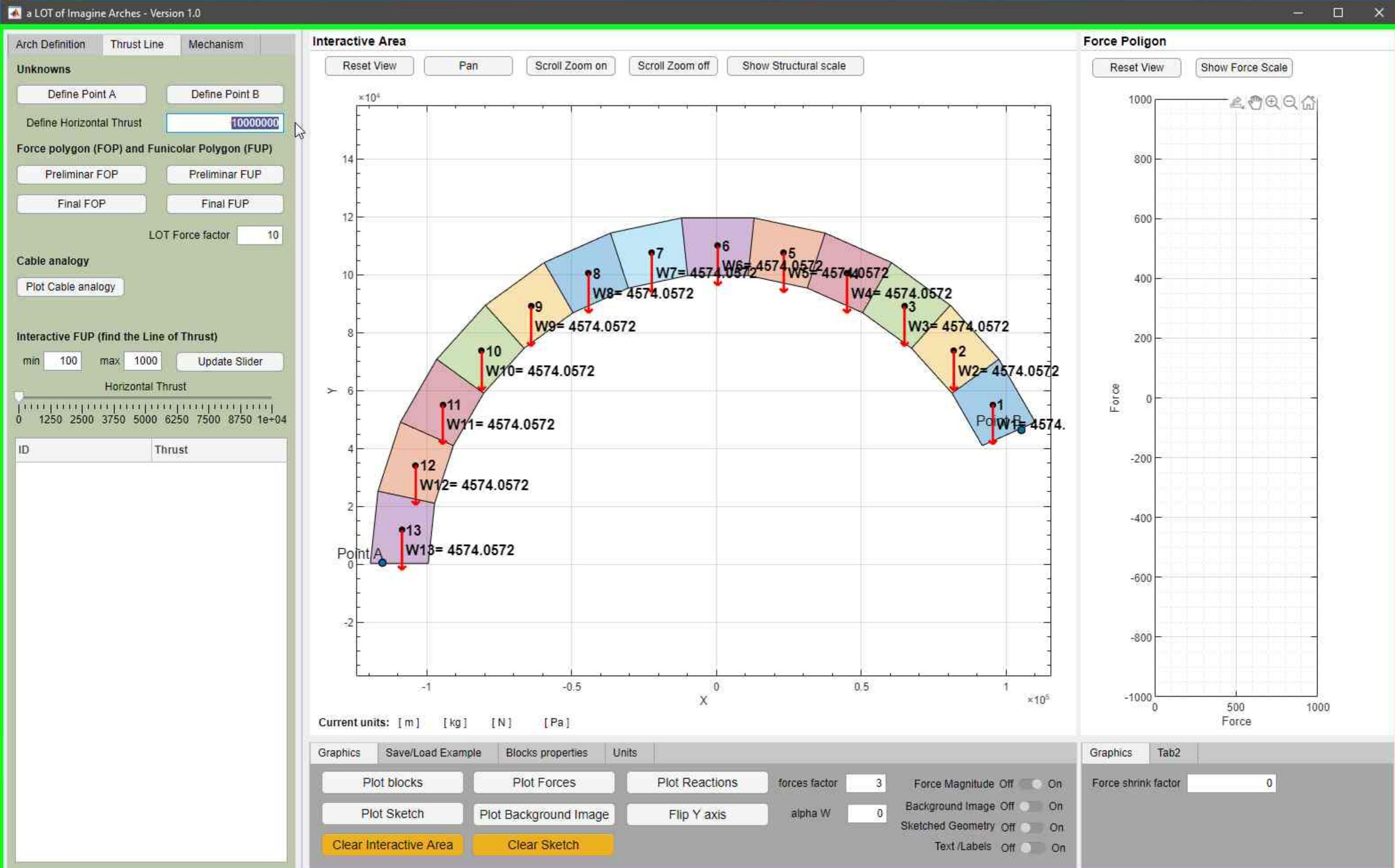


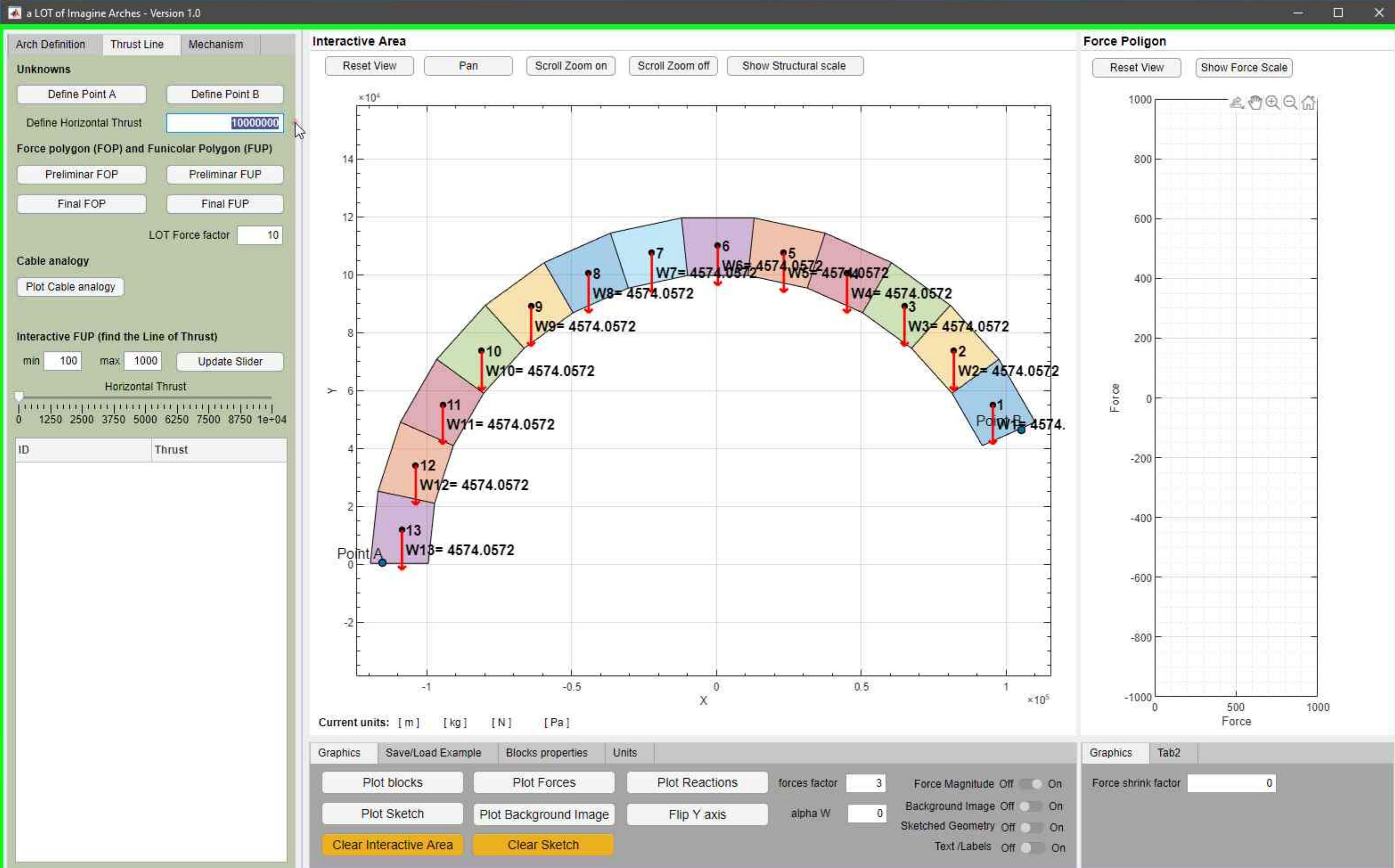


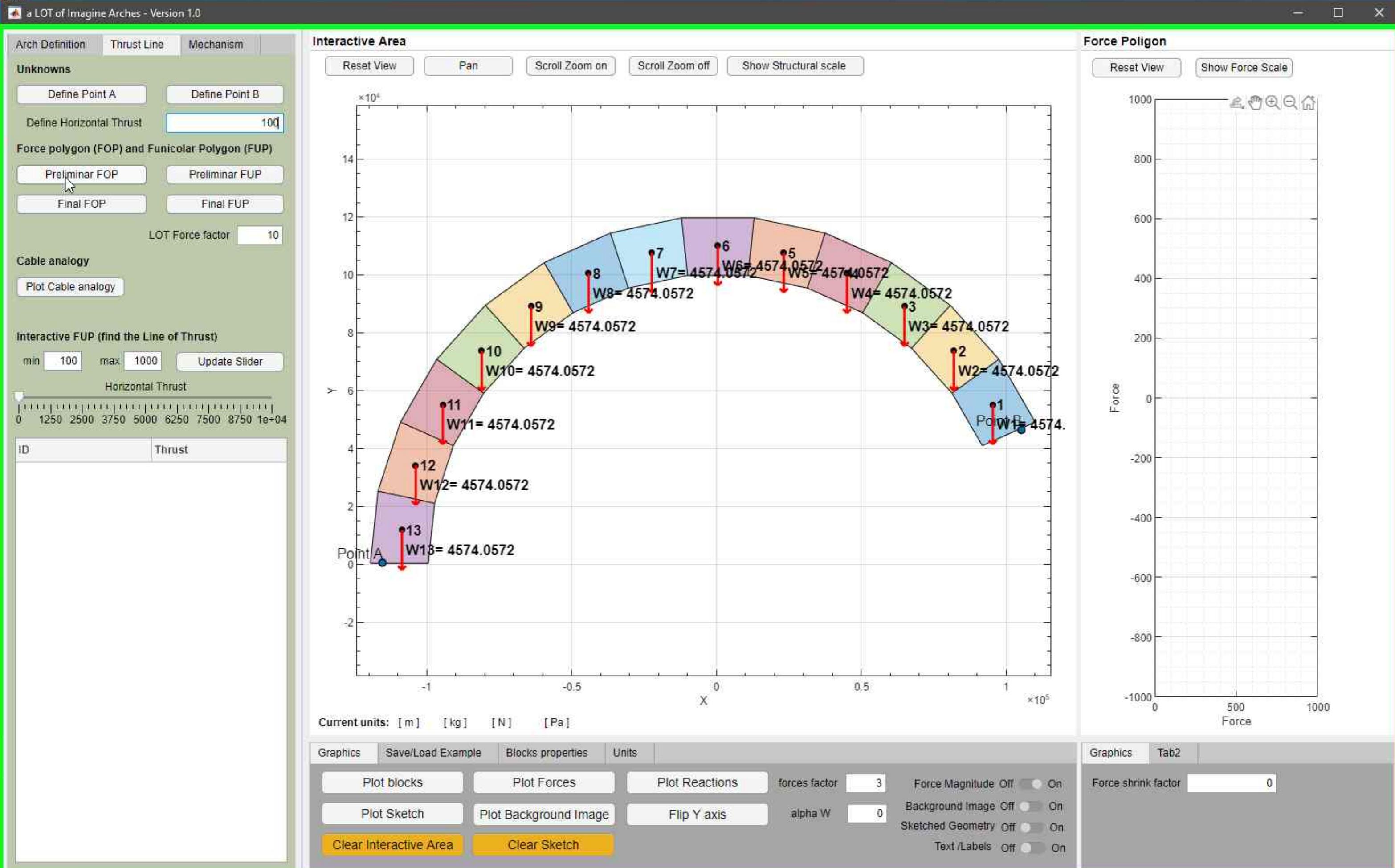


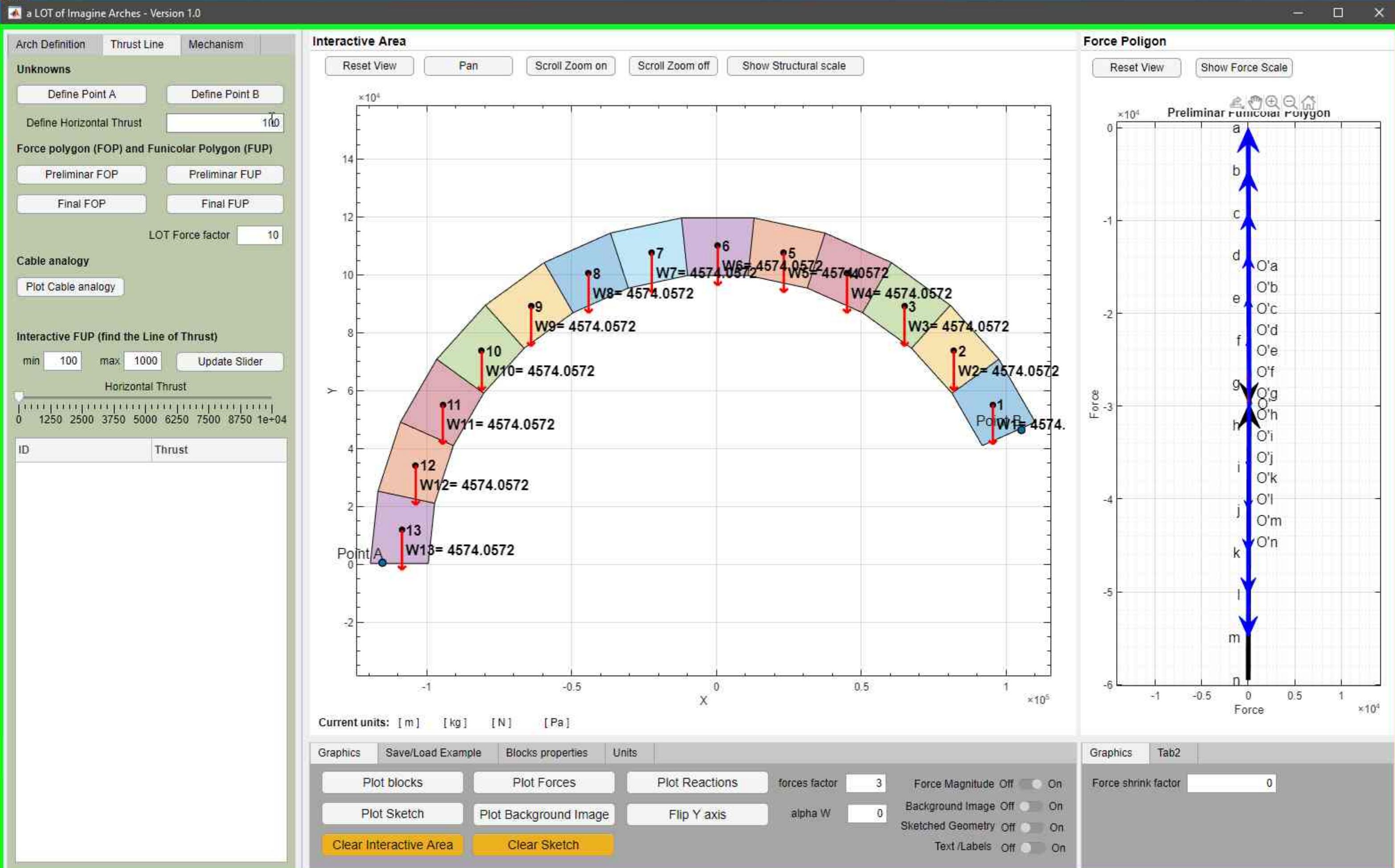


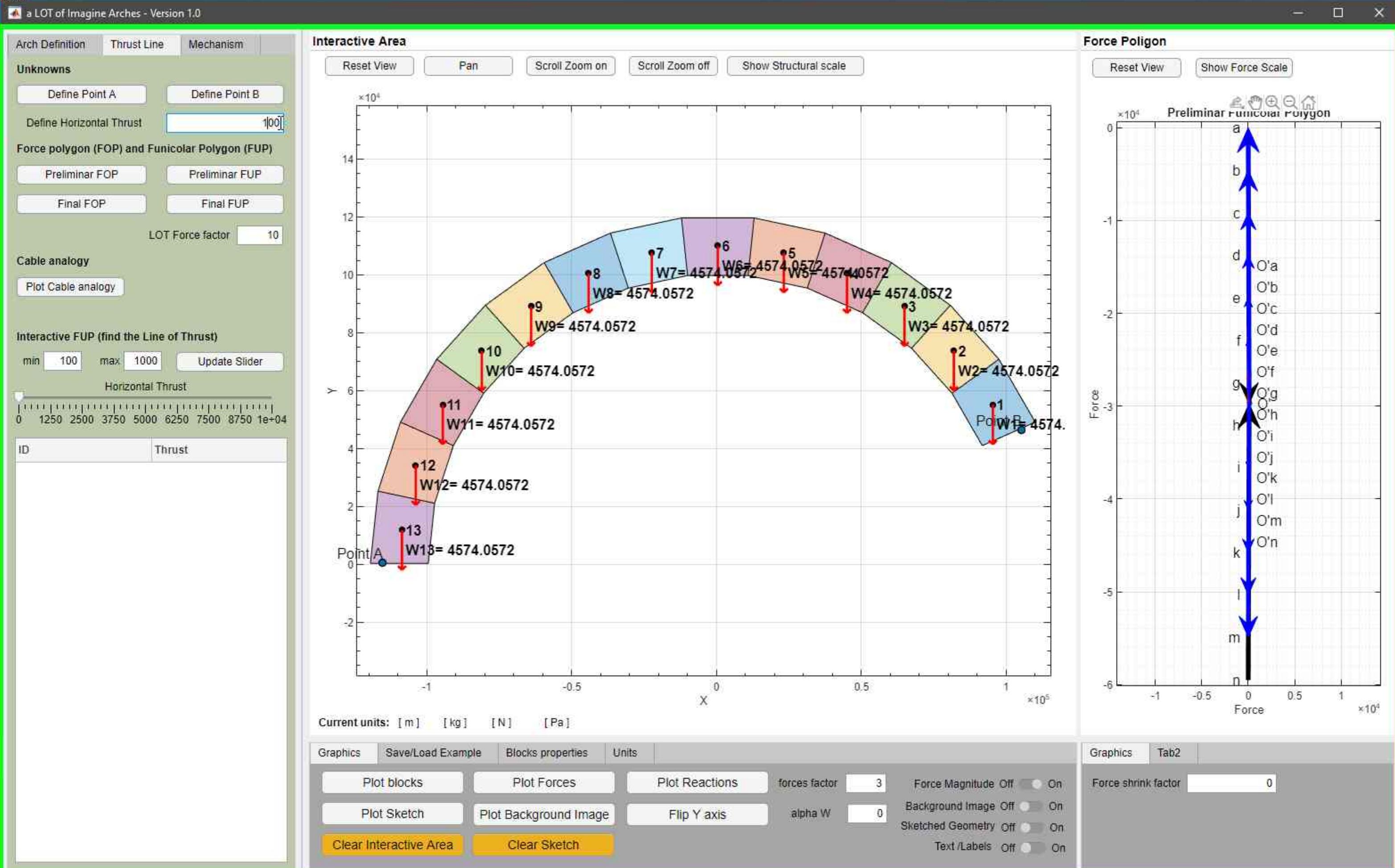


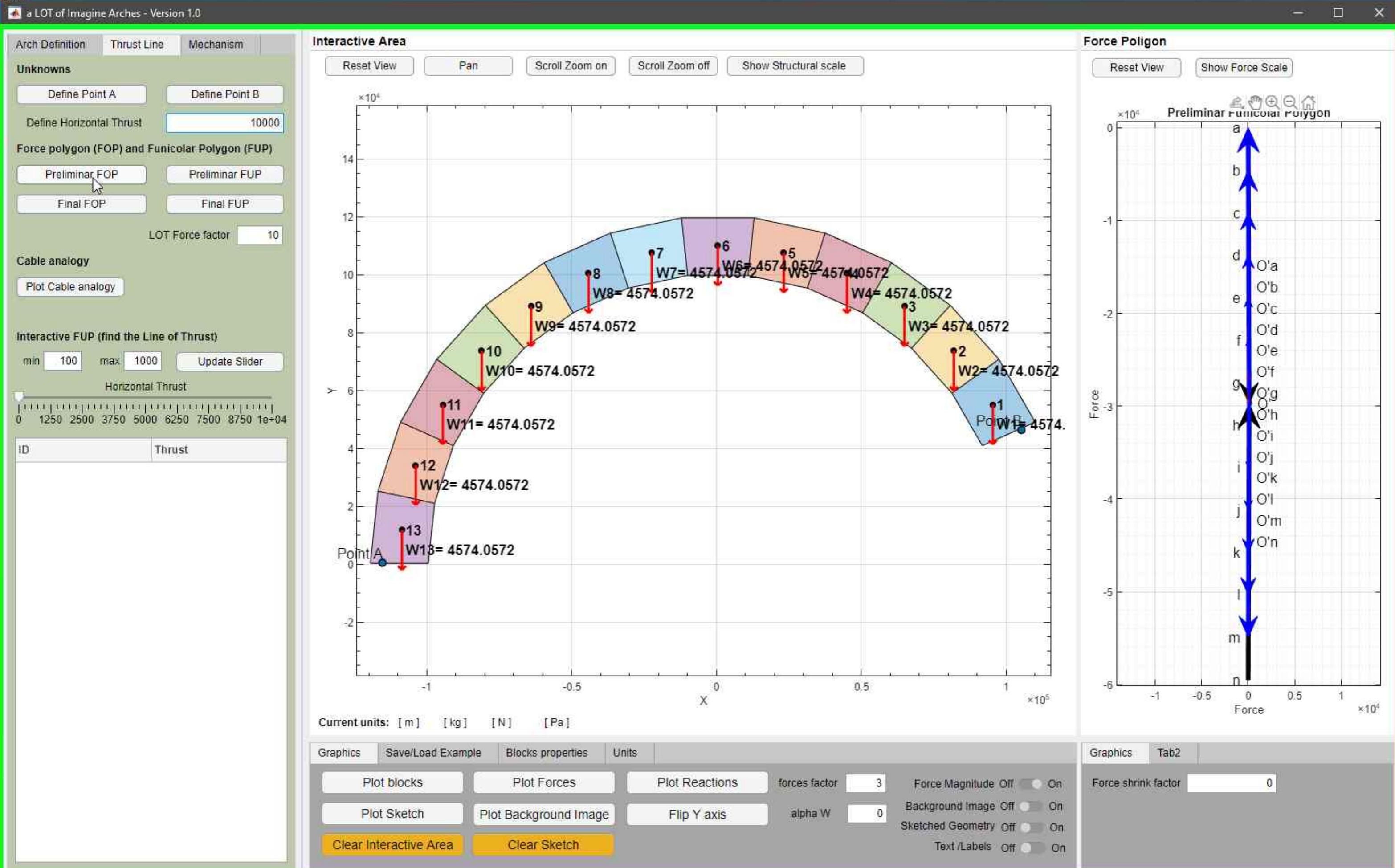












Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust $1e+04$

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminar FOP Preliminar FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

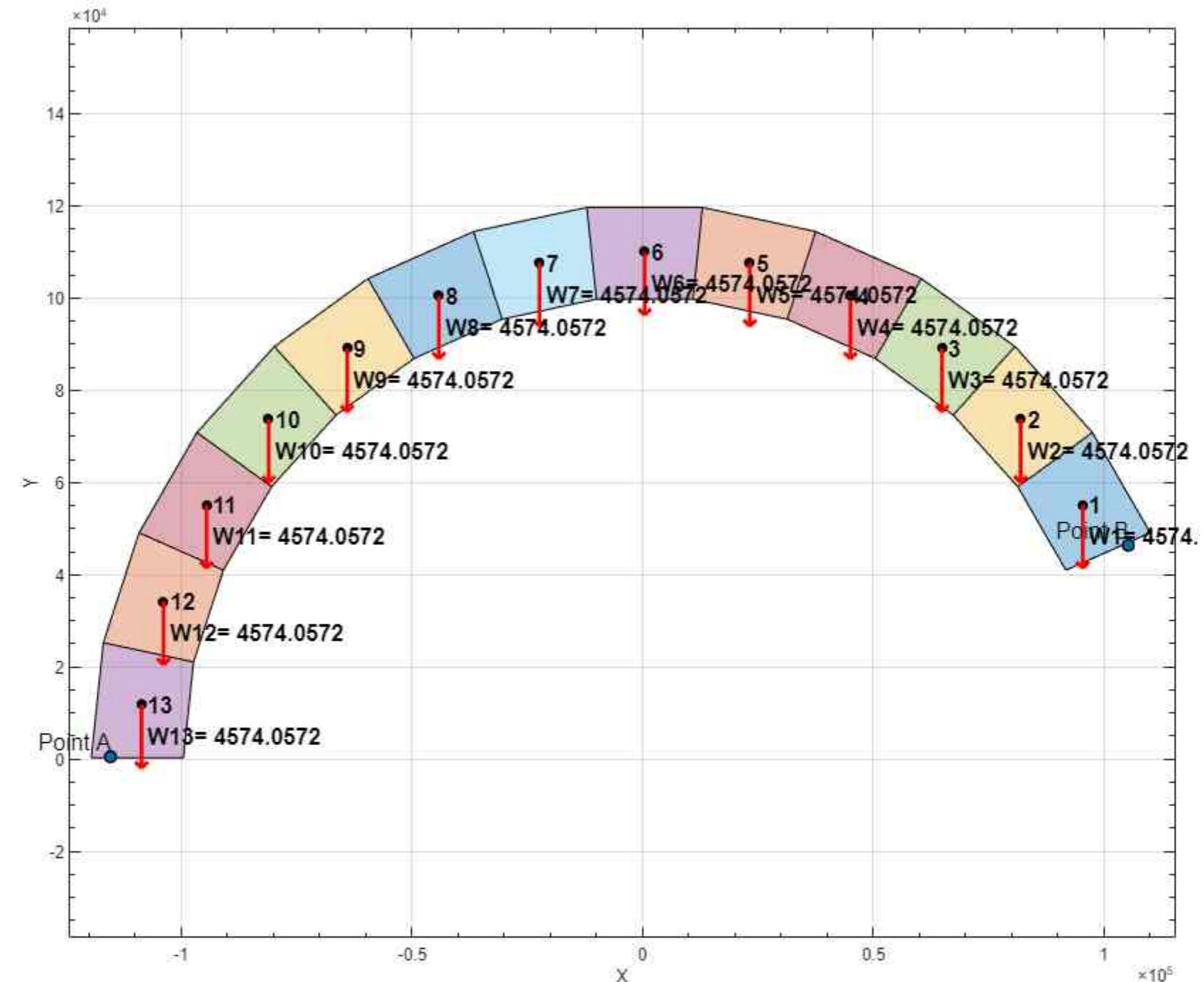
min 100 max 1000 Update Slider

Horizontal Thrust

ID Thrust

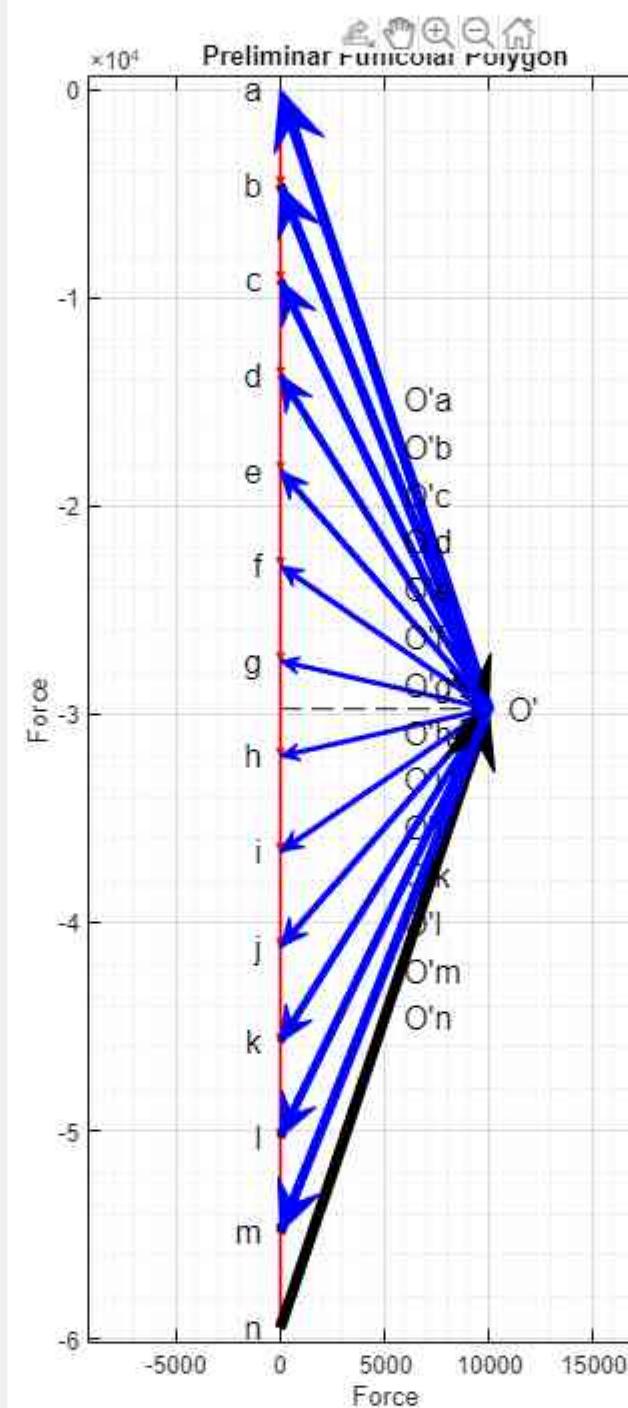
Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Force Polygon

Reset View Show Force Scale



Graphics Save/Load Example Blocks properties Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

Background Image Off OnSketched Geometry Off OnText / Labels Off On

Clear Interactive Area

Clear Sketch

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust $1e+04$

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminar FOP Preliminar FUP

Final FOP Final FUP

LOT Force factor 10

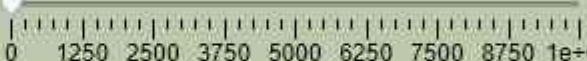
Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min 100 max 1000 Update Slider

Horizontal Thrust

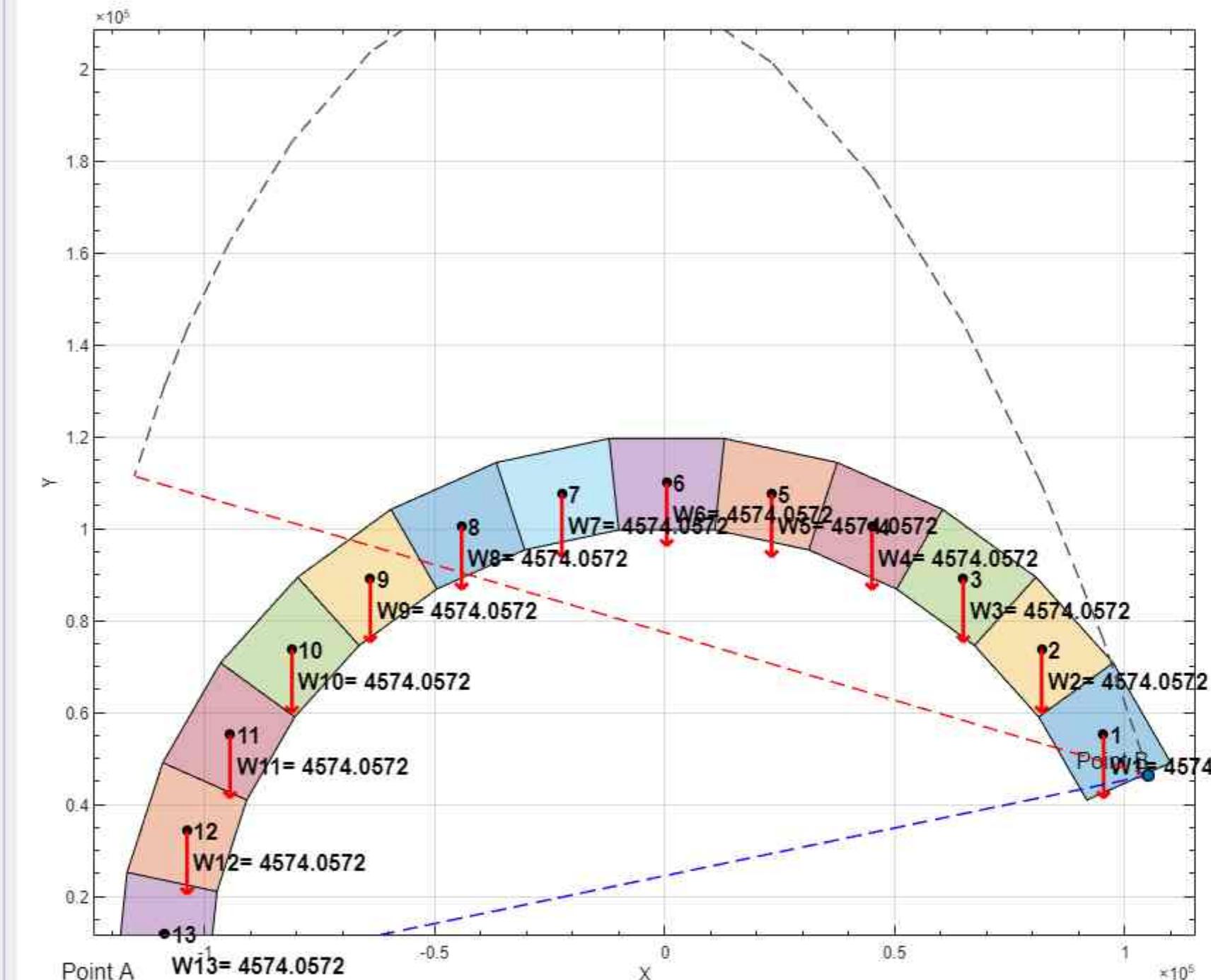


ID Thrust

ID	Thrust
Point A	
W1 = 4574	
W2 = 4574.0572	
W3 = 4574.0572	
W4 = 4574.0572	
W5 = 4574.0572	
W6 = 4574.0572	
W7 = 4574.0572	
W8 = 4574.0572	
W9 = 4574.0572	
W10 = 4574.0572	
W11 = 4574.0572	
W12 = 4574.0572	
W13 = 4574.0572	
W14 = 4574.0572	

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



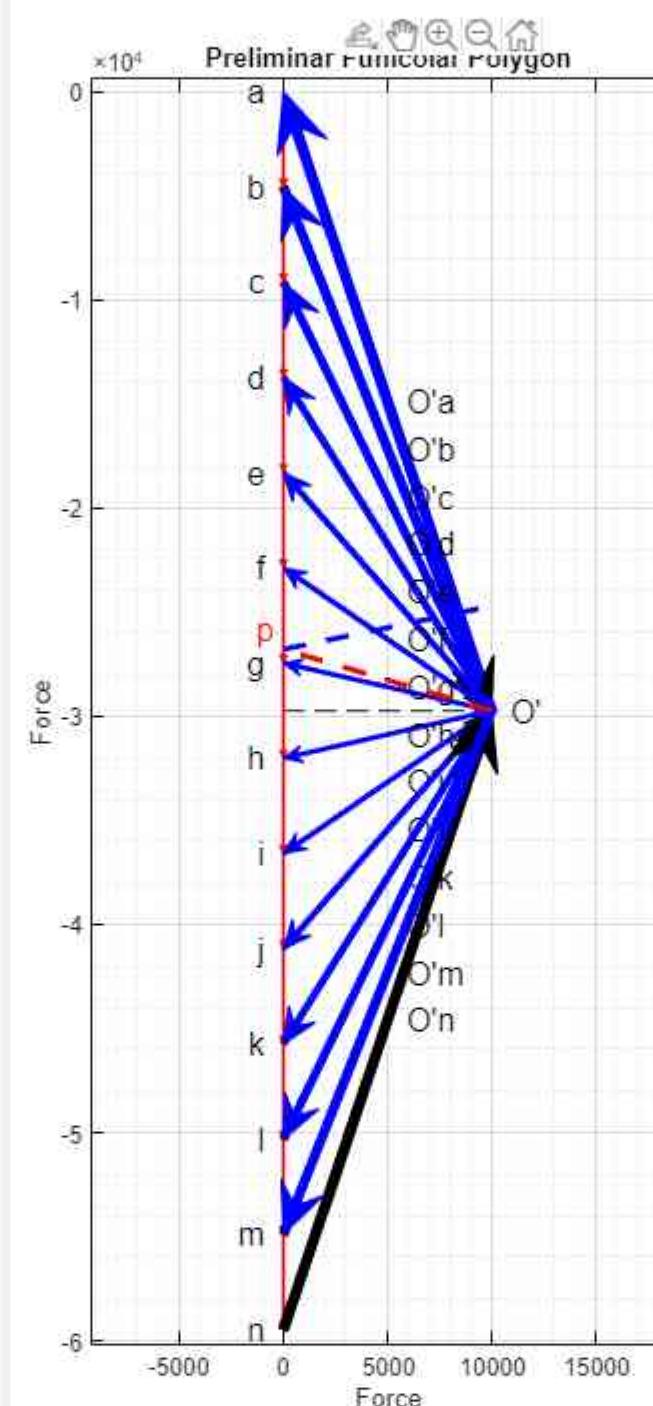
Current units: [m] [kg] [N] [Pa]

Graphics Save/Load Example Blocks properties Units

Plot blocks Plot Forces Plot Reactions forces factor 3 Force Magnitude Off On
 Plot Sketch Plot Background Image Flip Y axis alpha W 0 Background Image Off On
 Clear Interactive Area Clear Sketch Sketched Geometry Off On
 Text / Labels Off On

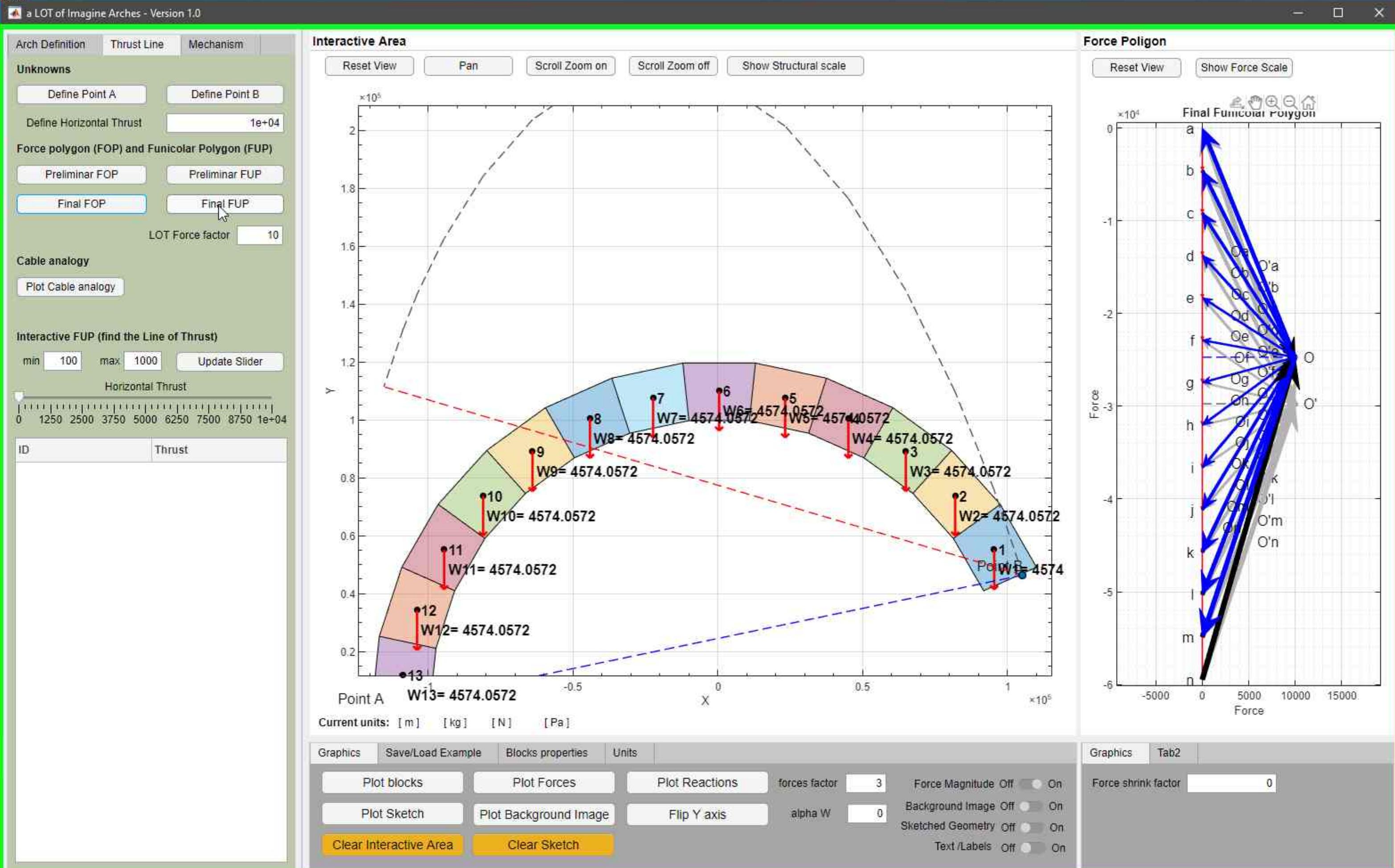
Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor 0



Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

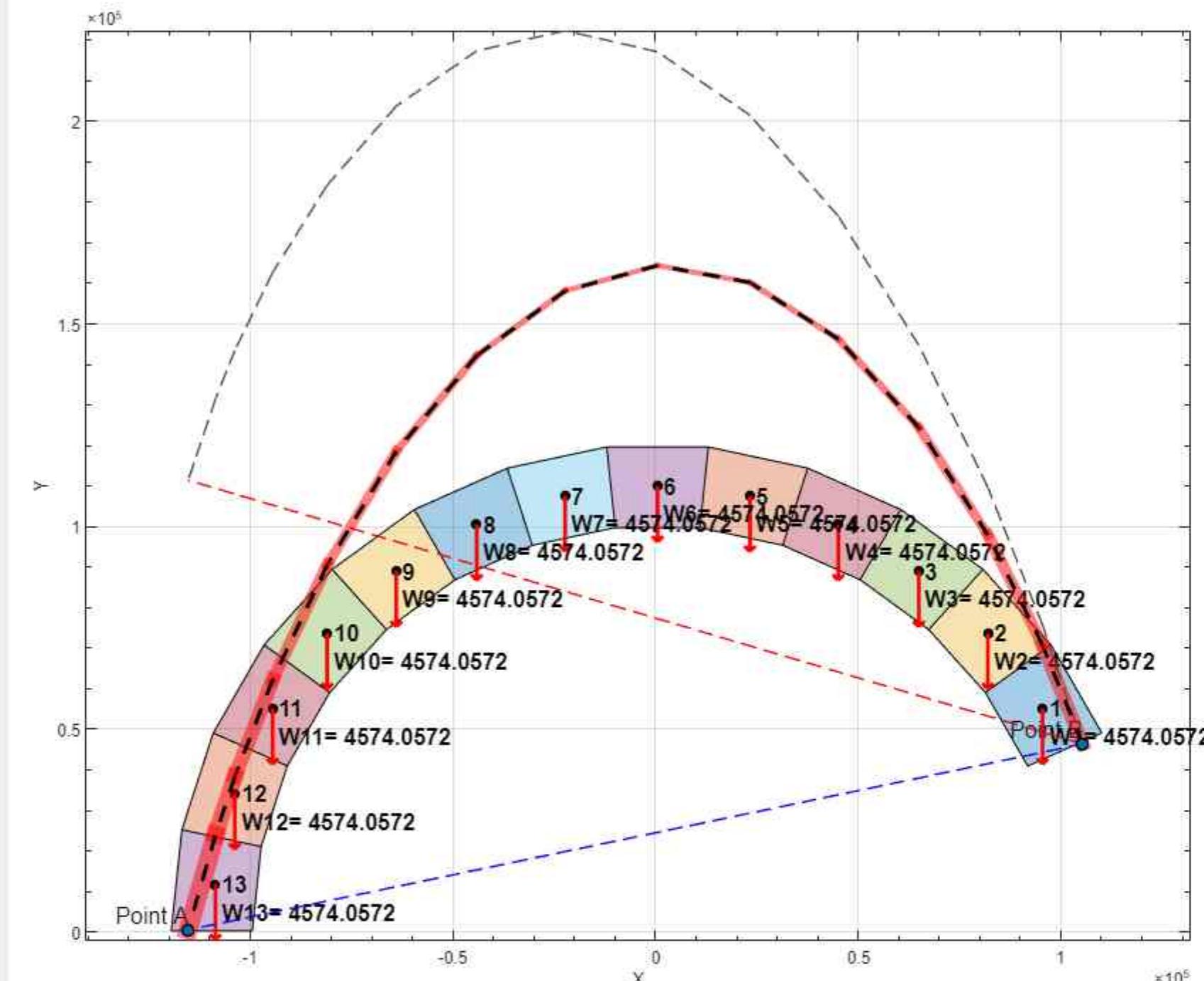
min 100 max 1000 Update Slider

Horizontal Thrust

ID	Thrust
1	2.6652e+04
2	2.2478e+04
3	1.8494e+04
4	1.4854e+04
5	1.1878e+04
6	1.0167e+04
7	1.0368e+04
8	1.2389e+04
9	1.5534e+04
10	1.9261e+04
11	2.3291e+04
12	2.7492e+04
13	3.1797e+04
14	3.6167e+04

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Current units: [m] [kg] [N] [Pa]

Graphics Save/Load Example Blocks properties Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

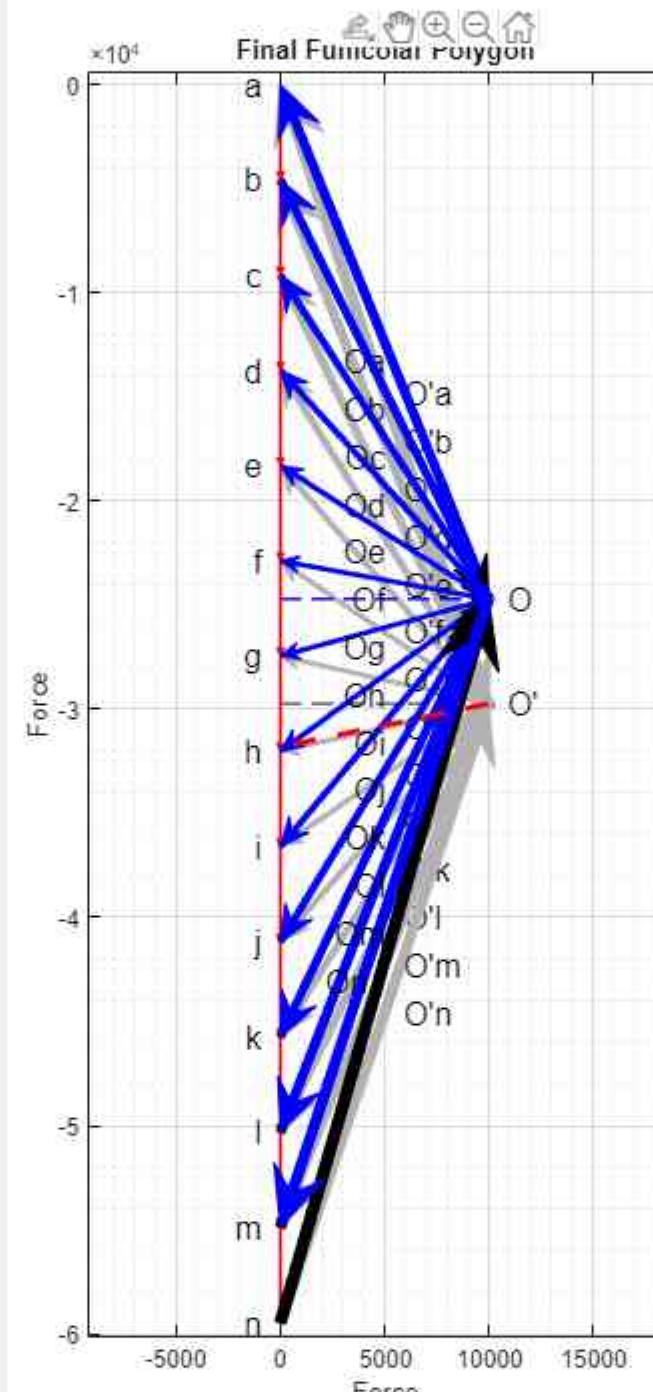
Background Image Off OnSketched Geometry Off OnText / Labels Off On

Clear Interactive Area

Clear Sketch

Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor 0

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust $1e+04$

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

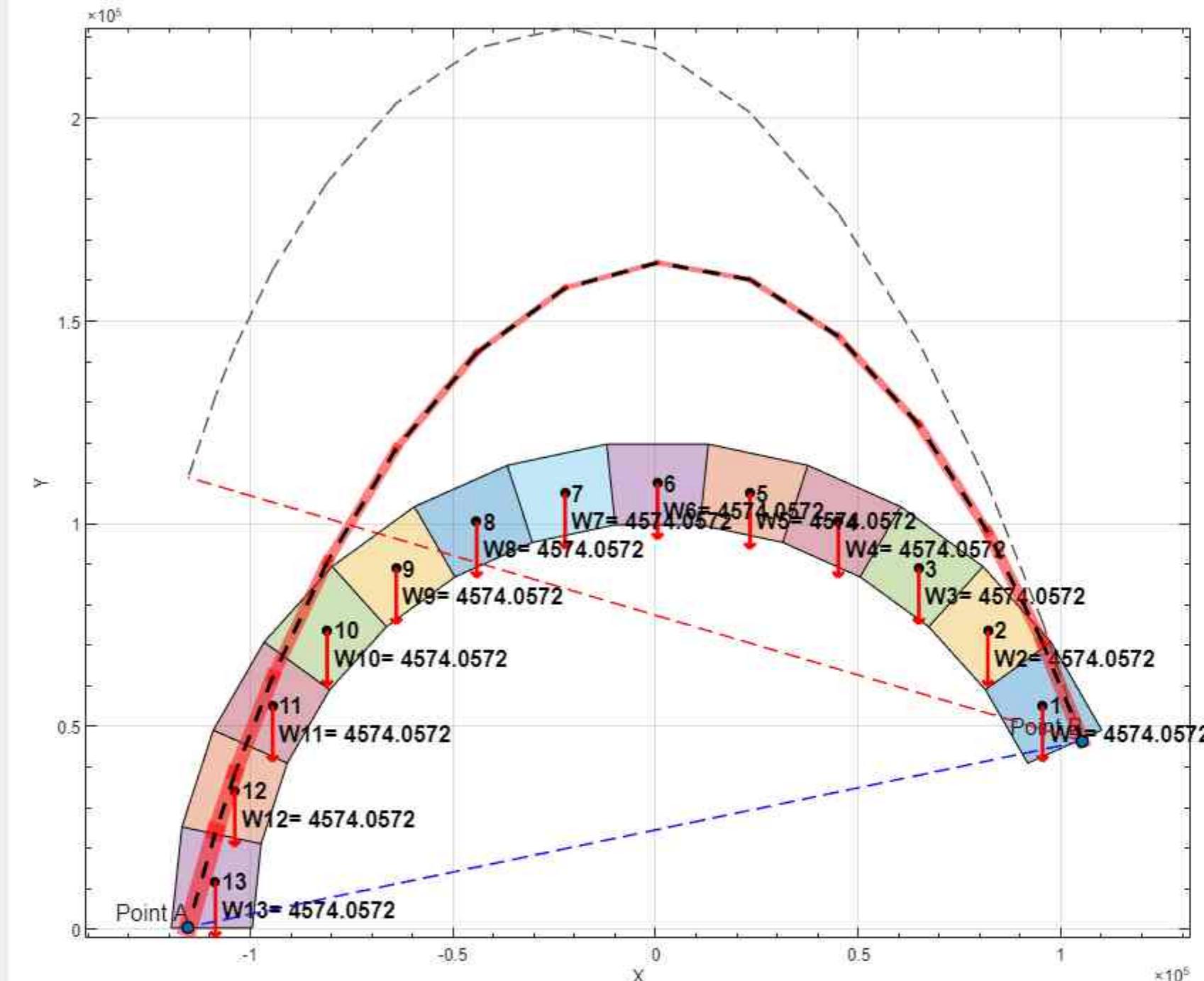
min 100 max 1000 Update Slider

Horizontal Thrust

ID	Thrust
1	$2.6652e+04$
2	$2.2478e+04$
3	$1.8494e+04$
4	$1.4854e+04$
5	$1.1878e+04$
6	$1.0167e+04$
7	$1.0368e+04$
8	$1.2389e+04$
9	$1.5534e+04$
10	$1.9261e+04$
11	$2.3291e+04$
12	$2.7492e+04$
13	$3.1797e+04$
14	$3.6167e+04$

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Current units: [m] [kg] [N] [Pa]

Graphics Save/Load Example Blocks properties Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

Background Image Off On

Sketched Geometry Off On

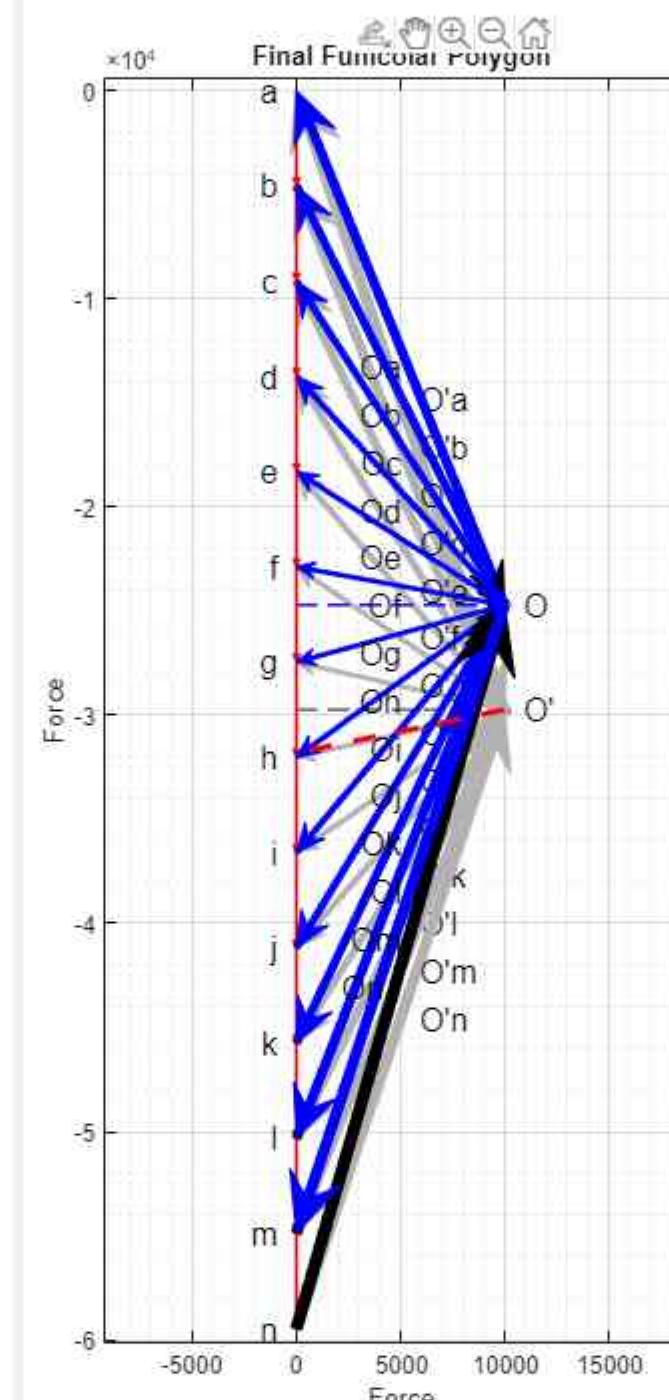
Text / Labels Off On

Clear Interactive Area

Clear Sketch

Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor 0

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

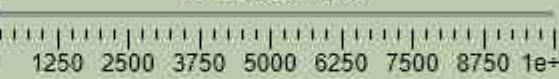
Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min 10000 max 10000 Update Slider

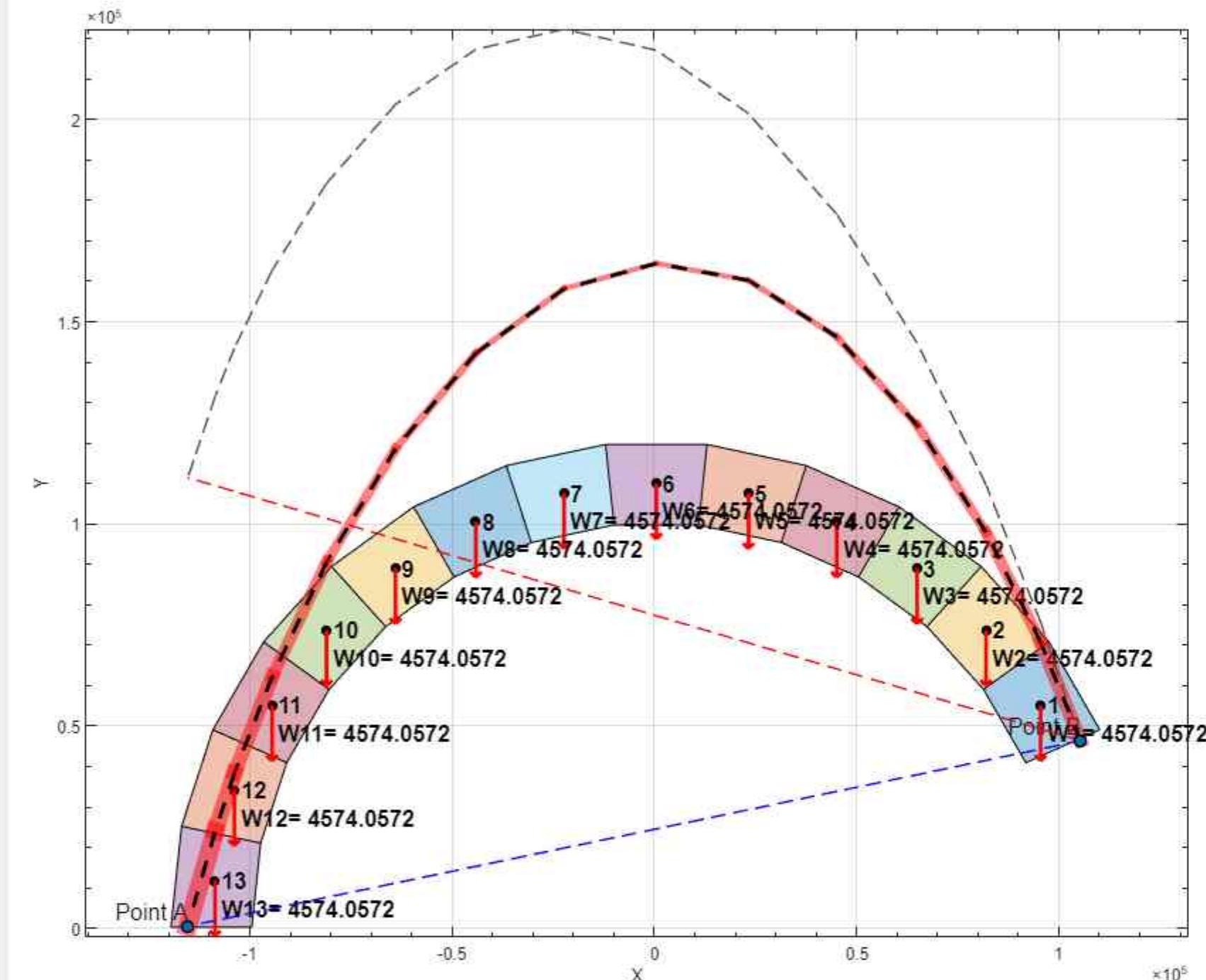
Horizontal Thrust



ID	Thrust
1	2.6652e+04
2	2.2478e+04
3	1.8494e+04
4	1.4854e+04
5	1.1878e+04
6	1.0167e+04
7	1.0368e+04
8	1.2389e+04
9	1.5534e+04
10	1.9261e+04
11	2.3291e+04
12	2.7492e+04
13	3.1797e+04
14	3.6167e+04

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Current units: [m] [kg] [N] [Pa]

Graphics Save/Load Example Blocks properties Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

Background Image Off On

Sketched Geometry Off On

Text / Labels Off On

Clear Interactive Area

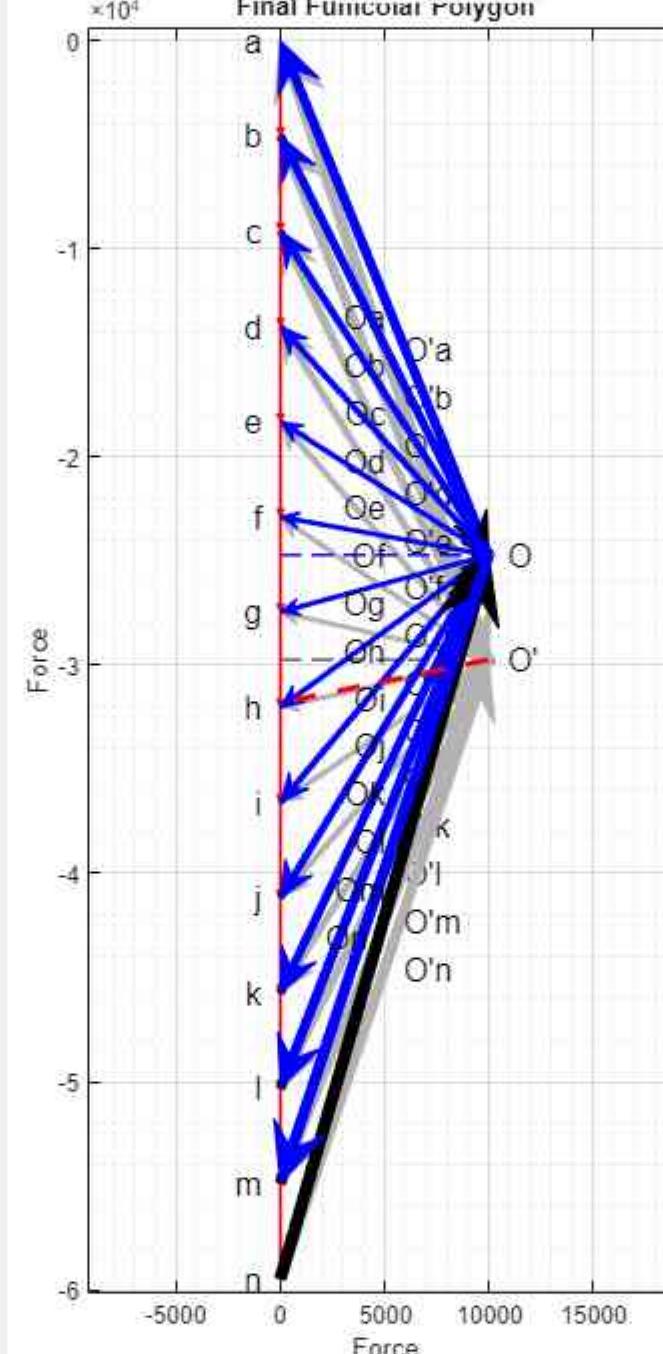
Clear Sketch

Force Polygon

Reset View Show Force Scale



Final Funicular Polygon



Graphics Tab2

Force shrink factor 0

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust $1e+04$

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min $1e+04$ max $1e+04$ Update Slider

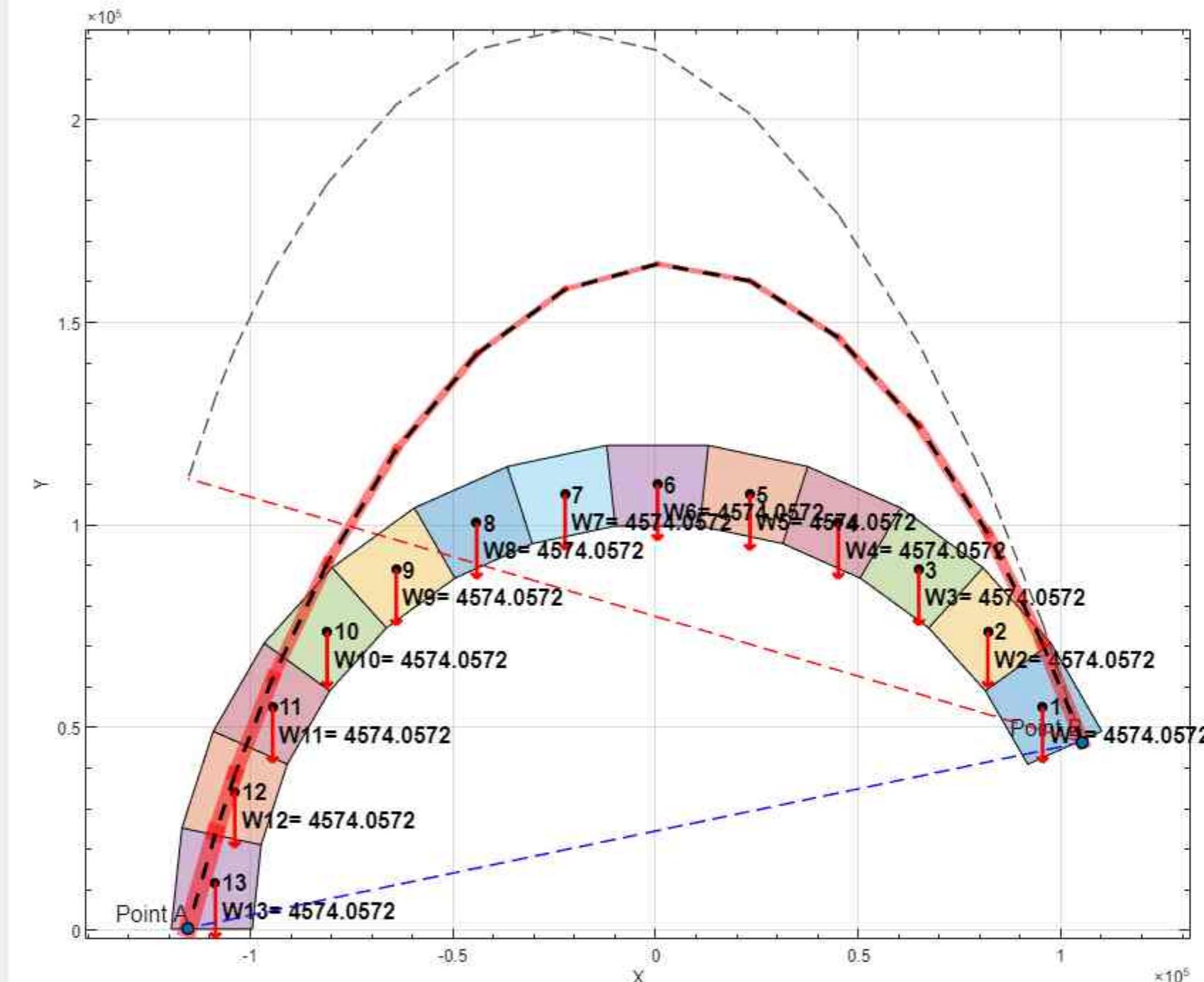
Horizontal Thrust



ID	Thrust
1	$2.6652e+04$
2	$2.2478e+04$
3	$1.8494e+04$
4	$1.4854e+04$
5	$1.1878e+04$
6	$1.0167e+04$
7	$1.0368e+04$
8	$1.2389e+04$
9	$1.5534e+04$
10	$1.9261e+04$
11	$2.3291e+04$
12	$2.7492e+04$
13	$3.1797e+04$
14	$3.6167e+04$

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Current units: [m] [kg] [N] [Pa]

Graphics Save/Load Example Blocks properties Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

Background Image Off On

Sketched Geometry Off On

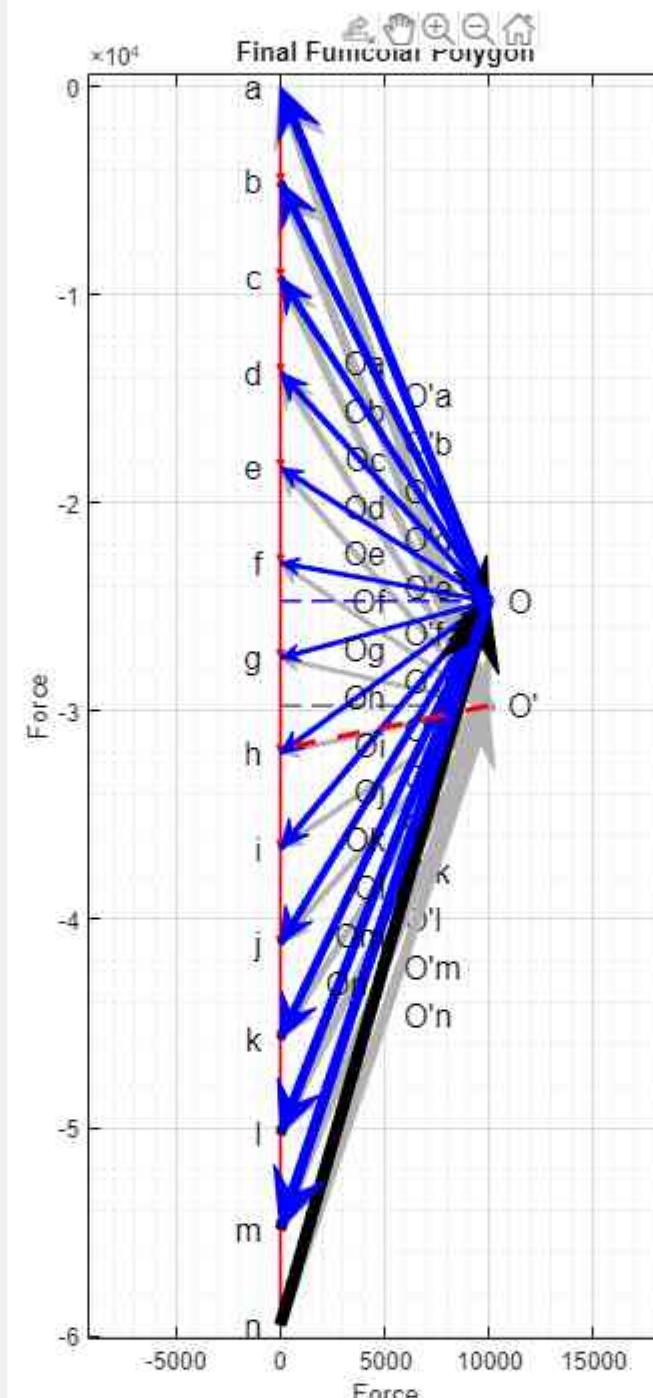
Text / Labels Off On

Clear Interactive Area

Clear Sketch

Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor 0

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor

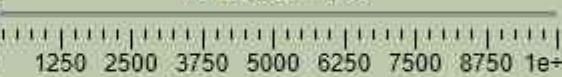
Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min max Update Slider

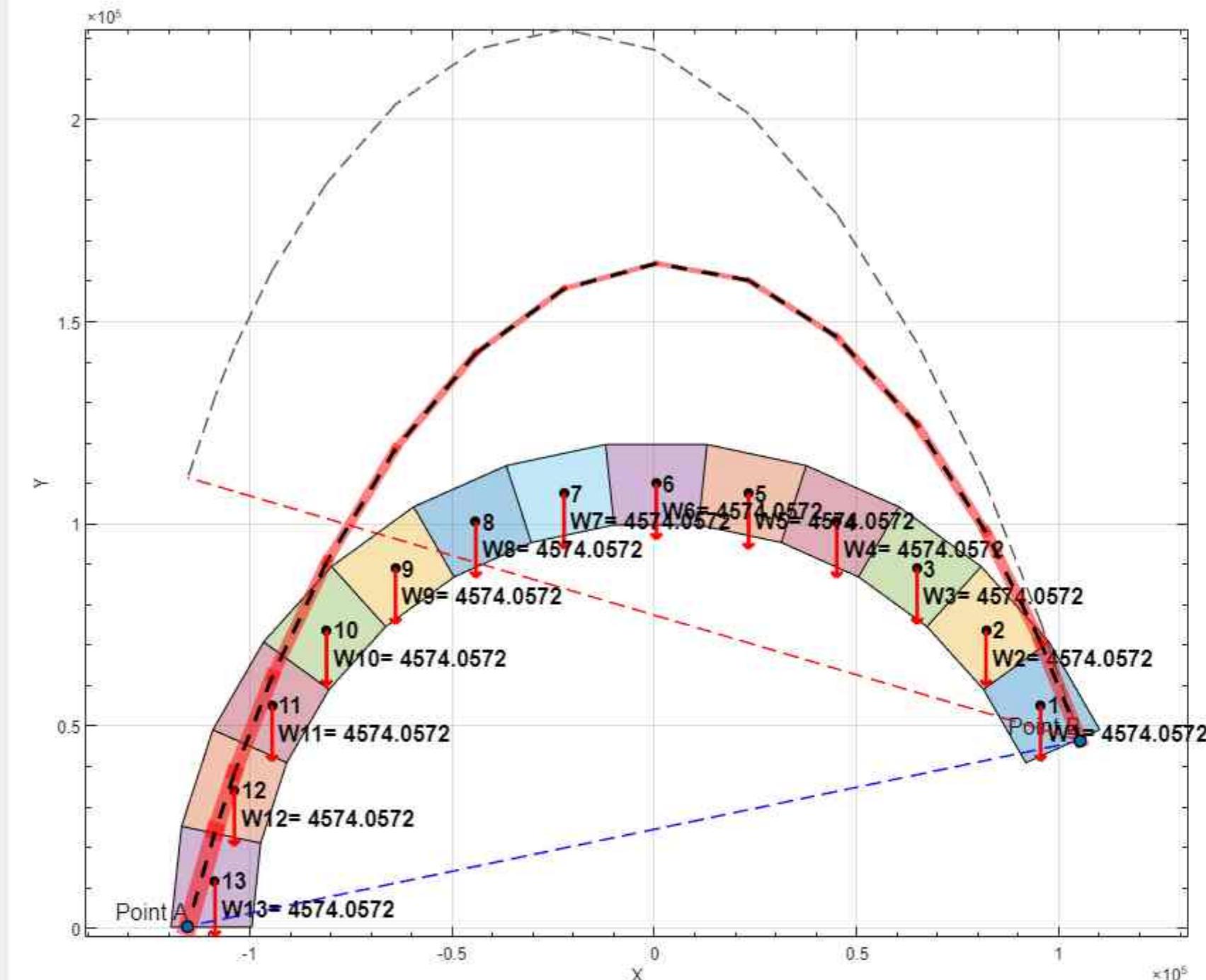
Horizontal Thrust



ID	Thrust
1	2.6652e+04
2	2.2478e+04
3	1.8494e+04
4	1.4854e+04
5	1.1878e+04
6	1.0167e+04
7	1.0368e+04
8	1.2389e+04
9	1.5534e+04
10	1.9261e+04
11	2.3291e+04
12	2.7492e+04
13	3.1797e+04
14	3.6167e+04

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Current units: [m] [kg] [N] [Pa]

Graphics Save/Load Example Blocks properties Units

Plot blocks

Plot Forces

Plot Reactions

forces factor Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

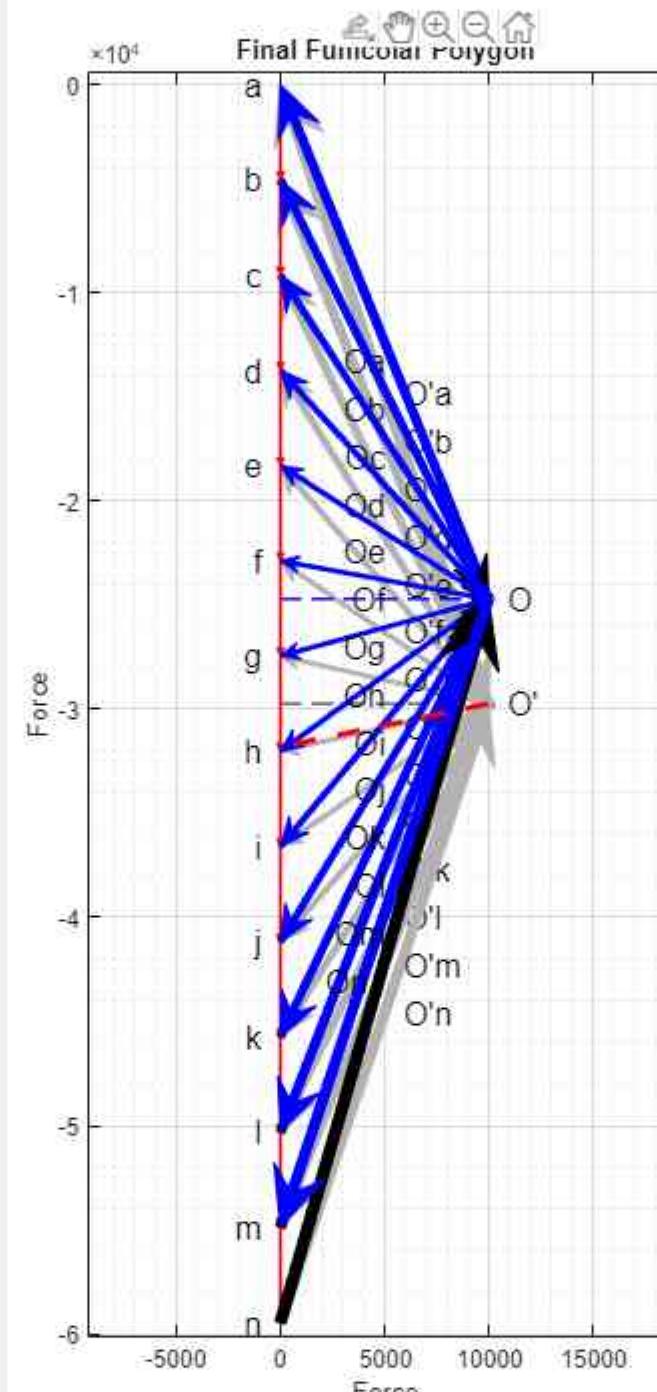
alpha W Background Image Off OnSketched Geometry Off OnText / Labels Off On

Clear Interactive Area

Clear Sketch

Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

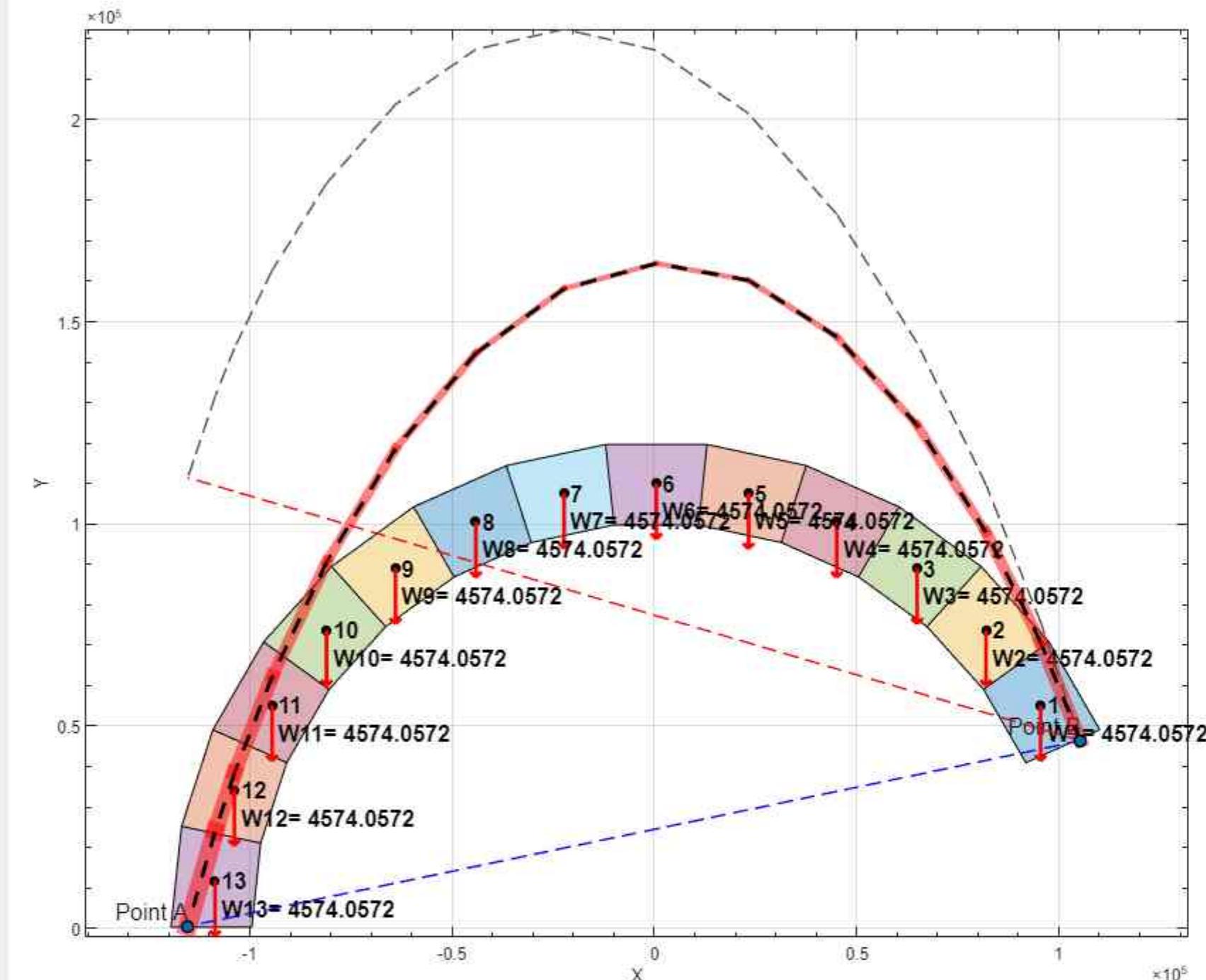
min 1e+04 max 15000 Update Slider

Horizontal Thrust

ID	Thrust
1	2.6652e+04
2	2.2478e+04
3	1.8494e+04
4	1.4854e+04
5	1.1878e+04
6	1.0167e+04
7	1.0368e+04
8	1.2389e+04
9	1.5534e+04
10	1.9261e+04
11	2.3291e+04
12	2.7492e+04
13	3.1797e+04
14	3.6167e+04

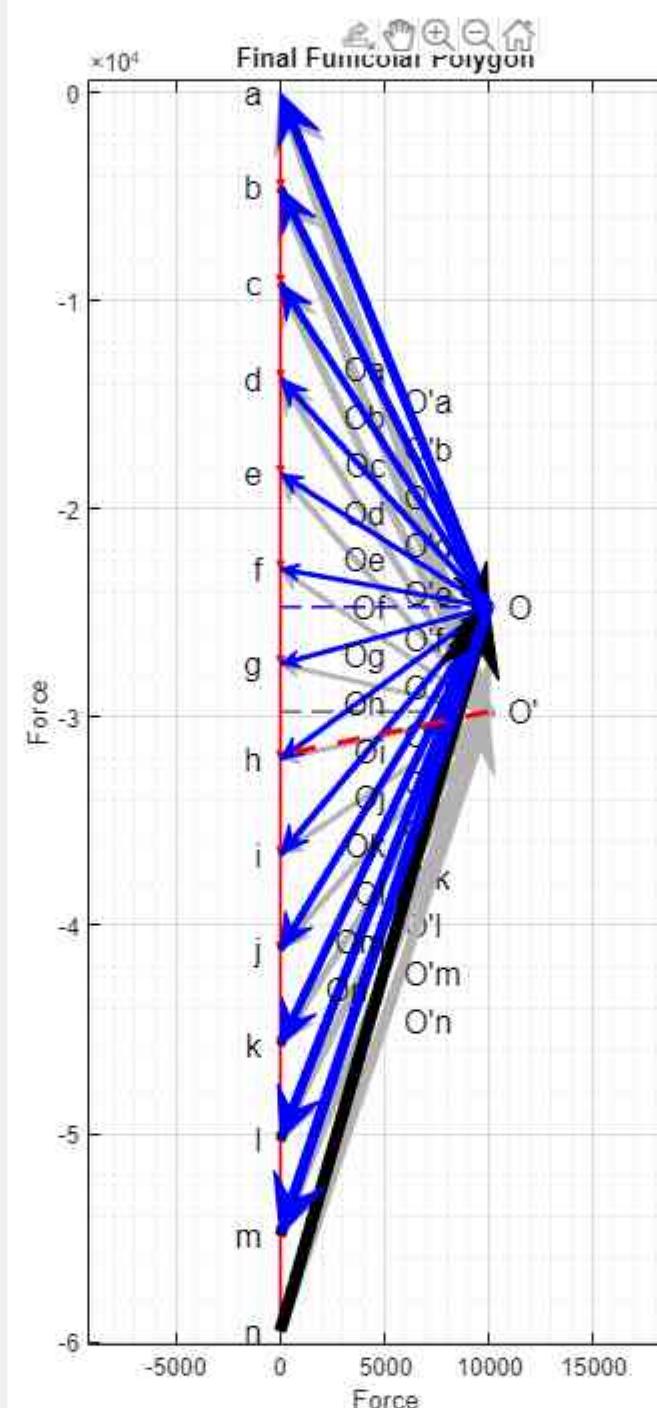
Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Force Polygon

Reset View Show Force Scale



Graphics Save/Load Example Blocks properties Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

Background Image Off On

Sketched Geometry Off On

Text / Labels Off On

Clear Interactive Area

Clear Sketch

Graphics Tab2

Force shrink factor 0

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust $1e+04$

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10×10^5

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min $1e+04$ max $1.5e+1$

Update Slider

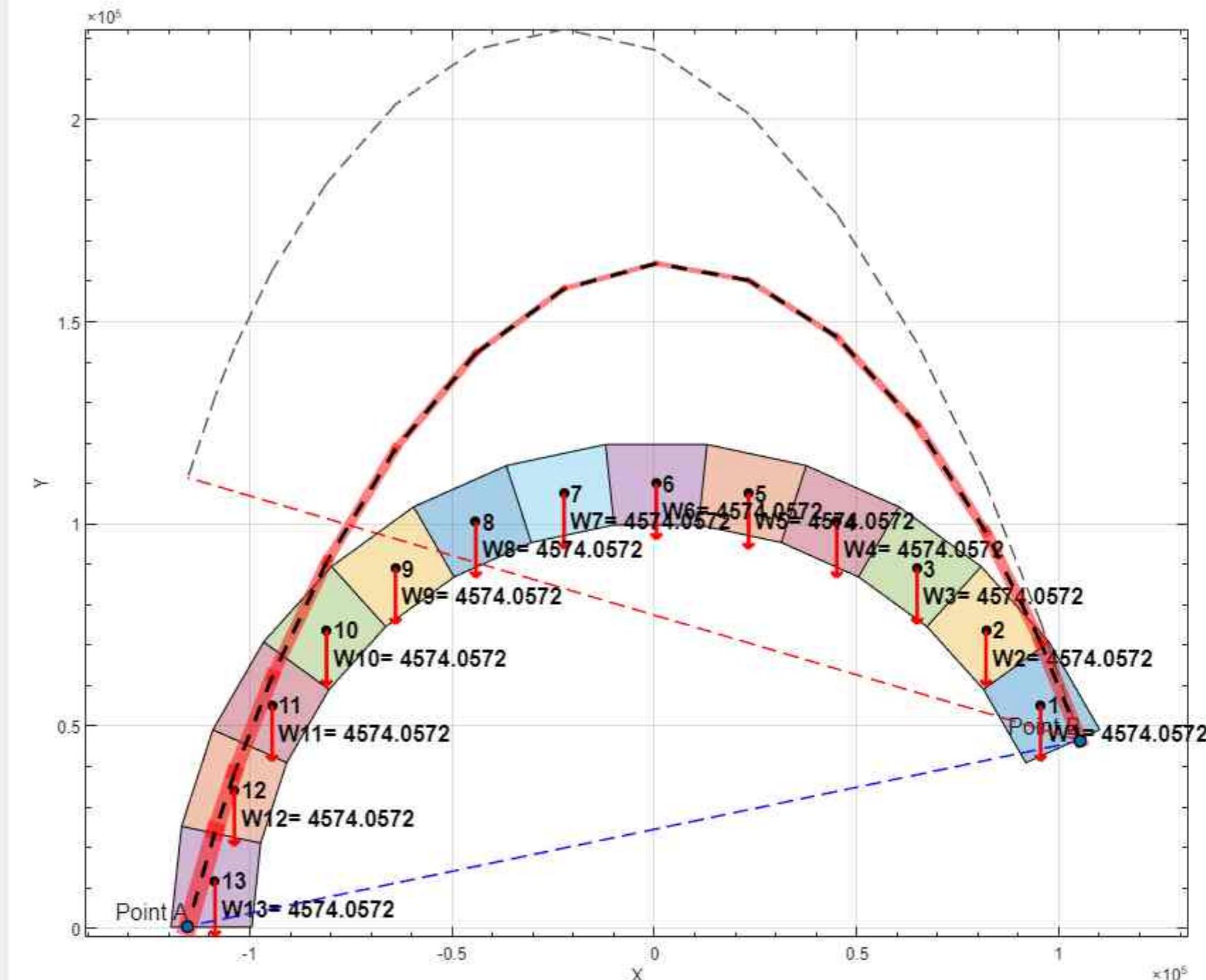
Horizontal Thrust

$e+04$ $1.1e+04$ $1.2e+04$ $1.3e+04$ $1.4e+04$ $1.5e+04$

ID	Thrust
1	$2.6652e+04$
2	$2.2478e+04$
3	$1.8494e+04$
4	$1.4854e+04$
5	$1.1878e+04$
6	$1.0167e+04$
7	$1.0368e+04$
8	$1.2389e+04$
9	$1.5534e+04$
10	$1.9261e+04$
11	$2.3291e+04$
12	$2.7492e+04$
13	$3.1797e+04$
14	$3.6167e+04$

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Graphics Save/Load Example Blocks properties Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

Background Image Off On

Sketched Geometry Off On

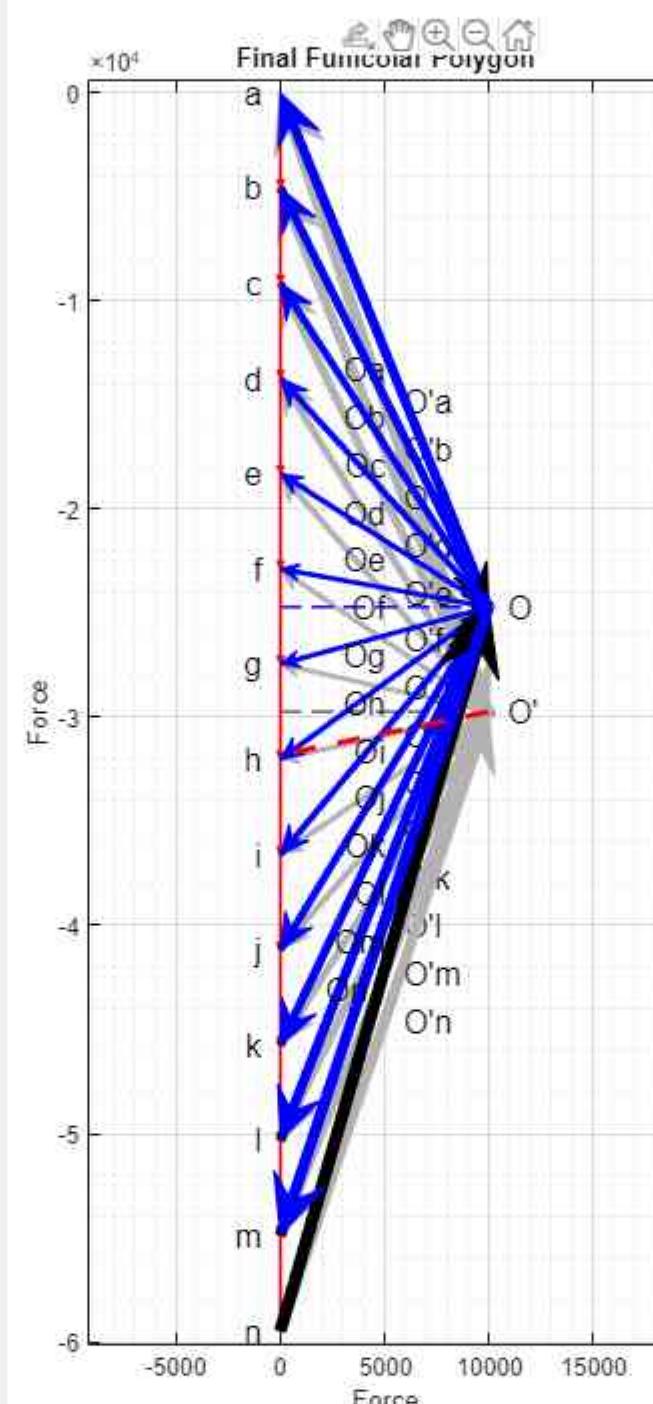
Text / Labels Off On

Clear Interactive Area

Clear Sketch

Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor 0

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.204e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

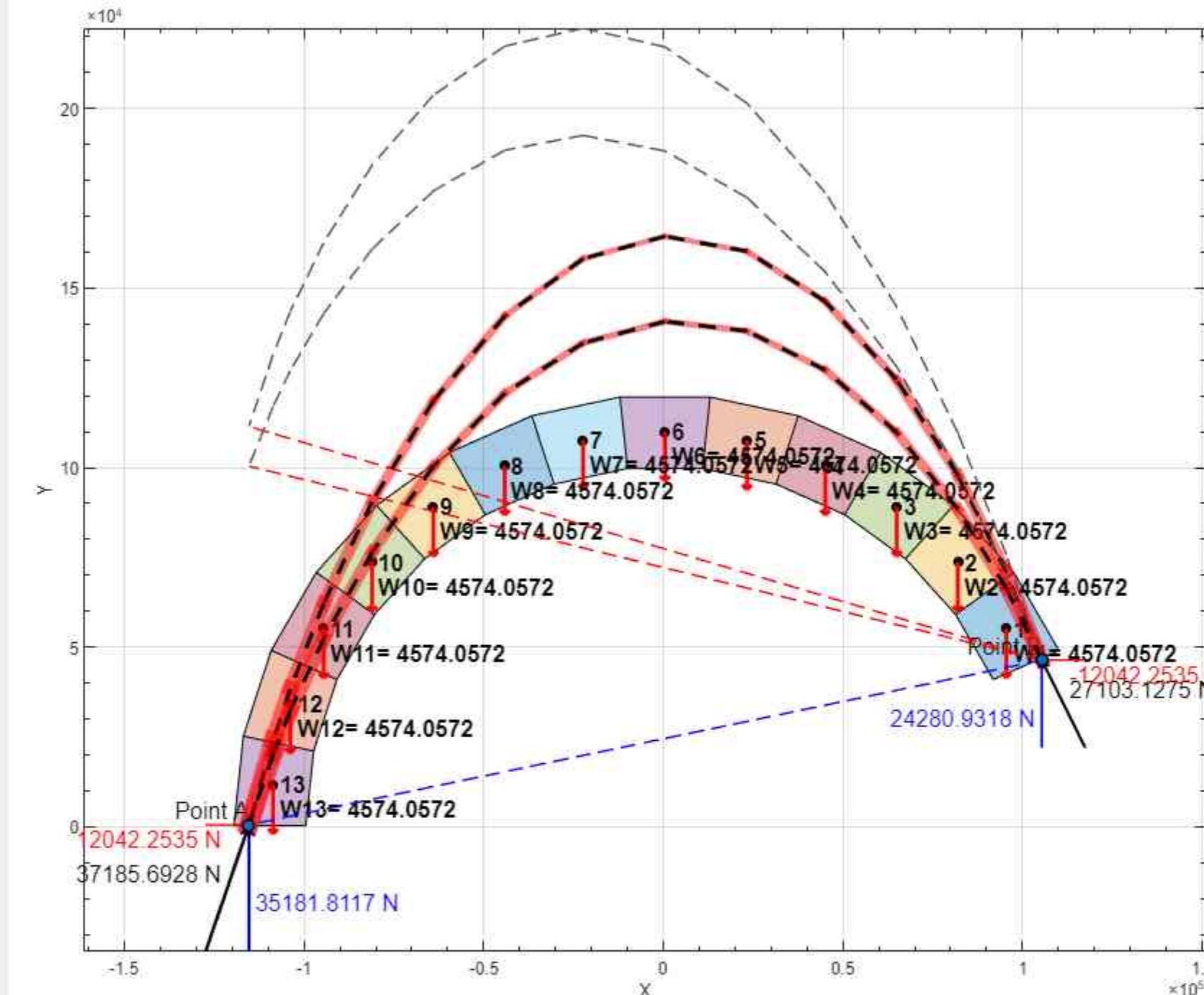
min 1e+04 max 1.5e+1 Update Slider

Horizontal Thrust

ID	Thrust
1	2.7103e+04
2	2.3095e+04
3	1.9340e+04
4	1.6016e+04
5	1.3447e+04
6	1.2125e+04
7	1.2451e+04
8	1.4314e+04
9	1.7222e+04
10	2.0740e+04
11	2.4608e+04
12	2.8684e+04
13	3.2891e+04
14	3.7186e+04

Interactive Area

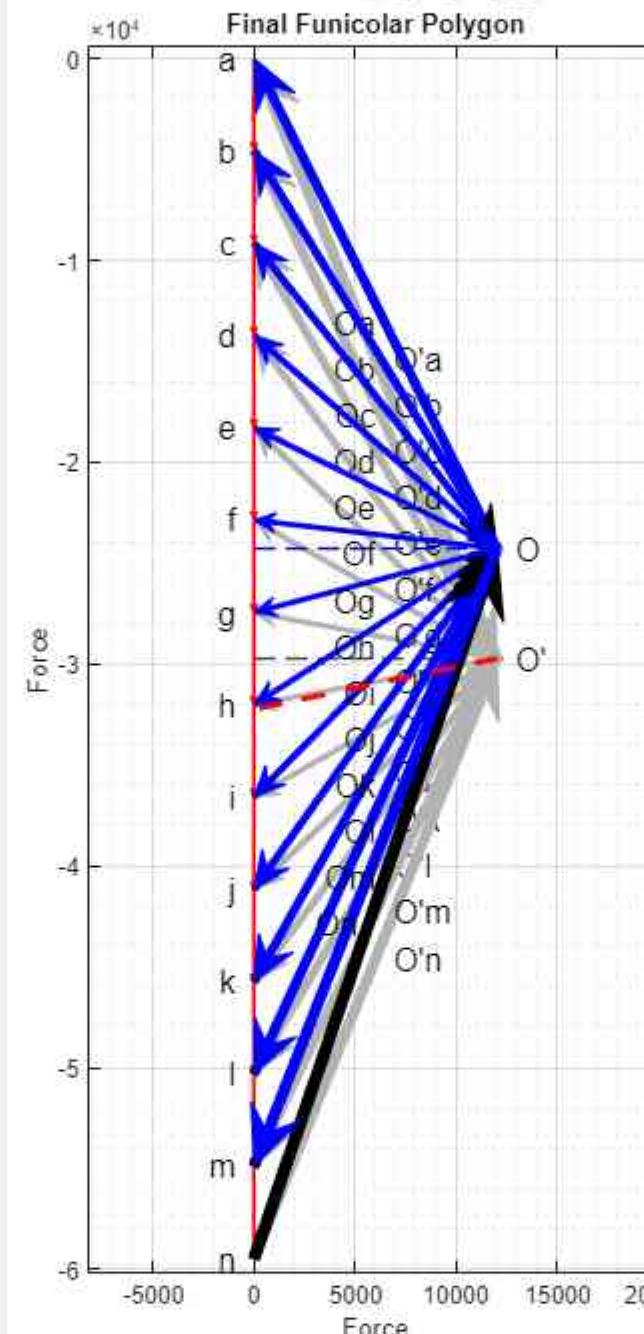
Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Graphics	Save/Load Example	Blocks properties	Units	Plot blocks	Plot Forces	Plot Reactions	forces factor <input type="text" value="3"/>	Force Magnitude Off <input checked="" type="radio"/> On
Plot Sketch	Plot Background Image	Flip Y axis	alpha W <input type="text" value="0"/>	Background Image Off <input checked="" type="radio"/> On	Sketched Geometry Off <input checked="" type="radio"/> On	Text / Labels Off <input checked="" type="radio"/> On	Force shrink factor <input type="text" value="0"/>	
Clear Interactive Area				Clear Sketch				

Force Polygon

Reset View Show Force Scale



Graphics	Tab2
Force shrink factor <input type="text" value="0"/>	

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.259e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min 1e+04 max 1.5e+1 Update Slider

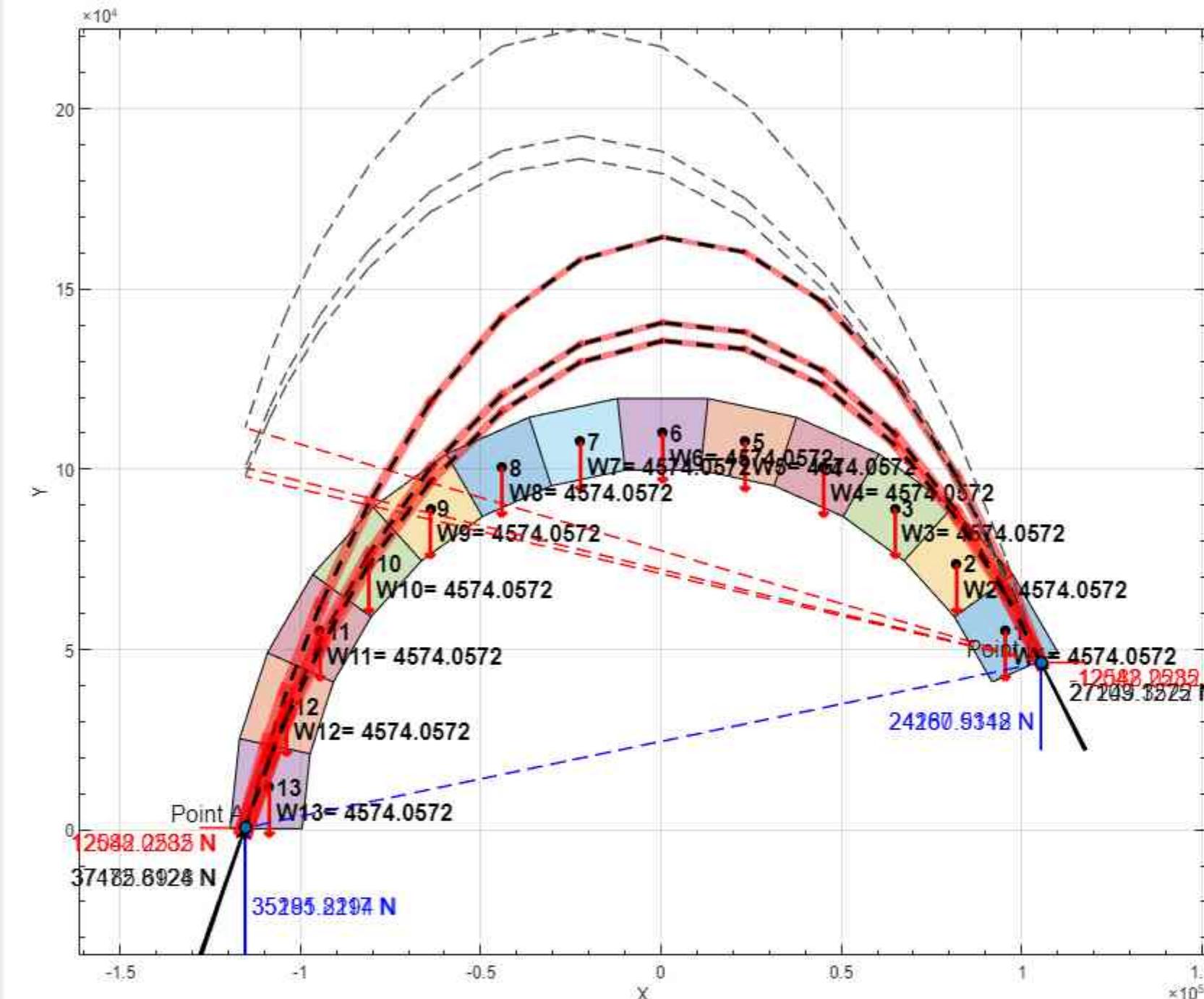
Horizontal Thrust

e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7249e+04
2	2.3289e+04
3	1.9597e+04
4	1.6357e+04
5	1.3890e+04
6	1.2655e+04
7	1.3008e+04
8	1.4836e+04
9	1.7687e+04
10	2.1152e+04
11	2.4977e+04
12	2.9019e+04
13	3.3200e+04
14	3.7473e+04

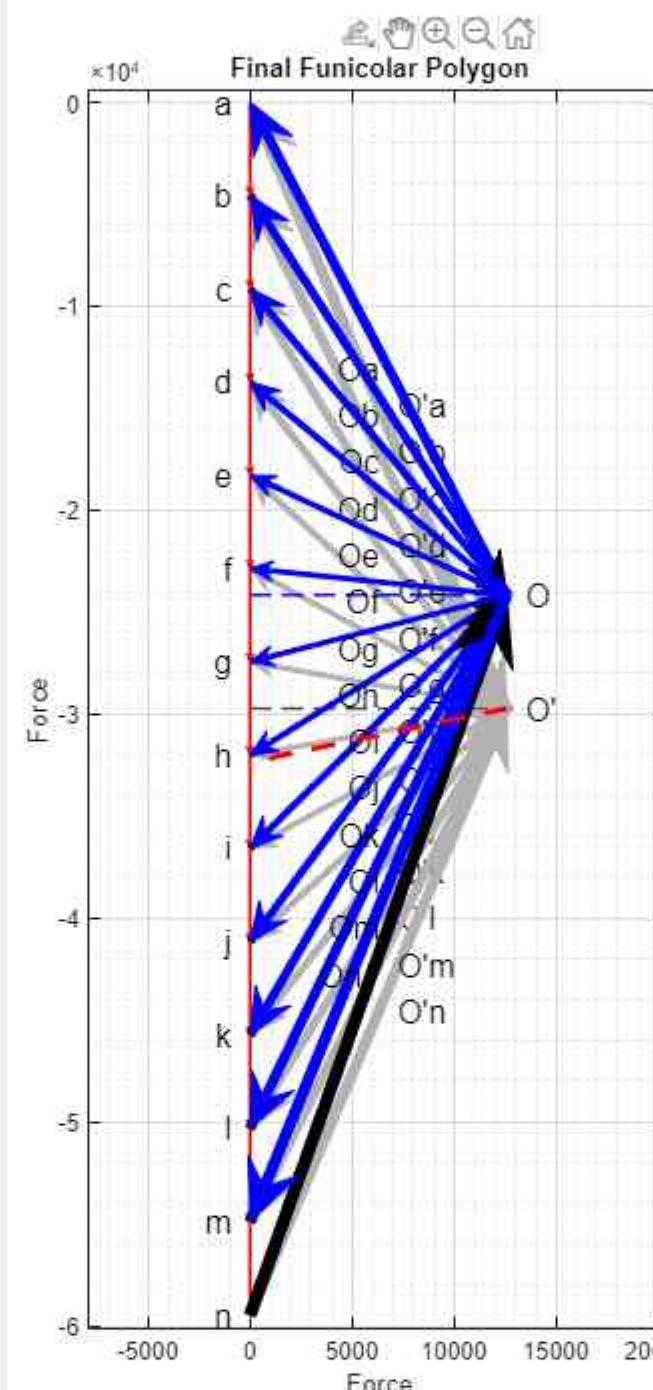
Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Force Polygon

Reset View Show Force Scale



Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.361e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min 1e+04 max 1.5e+1 Update Slider

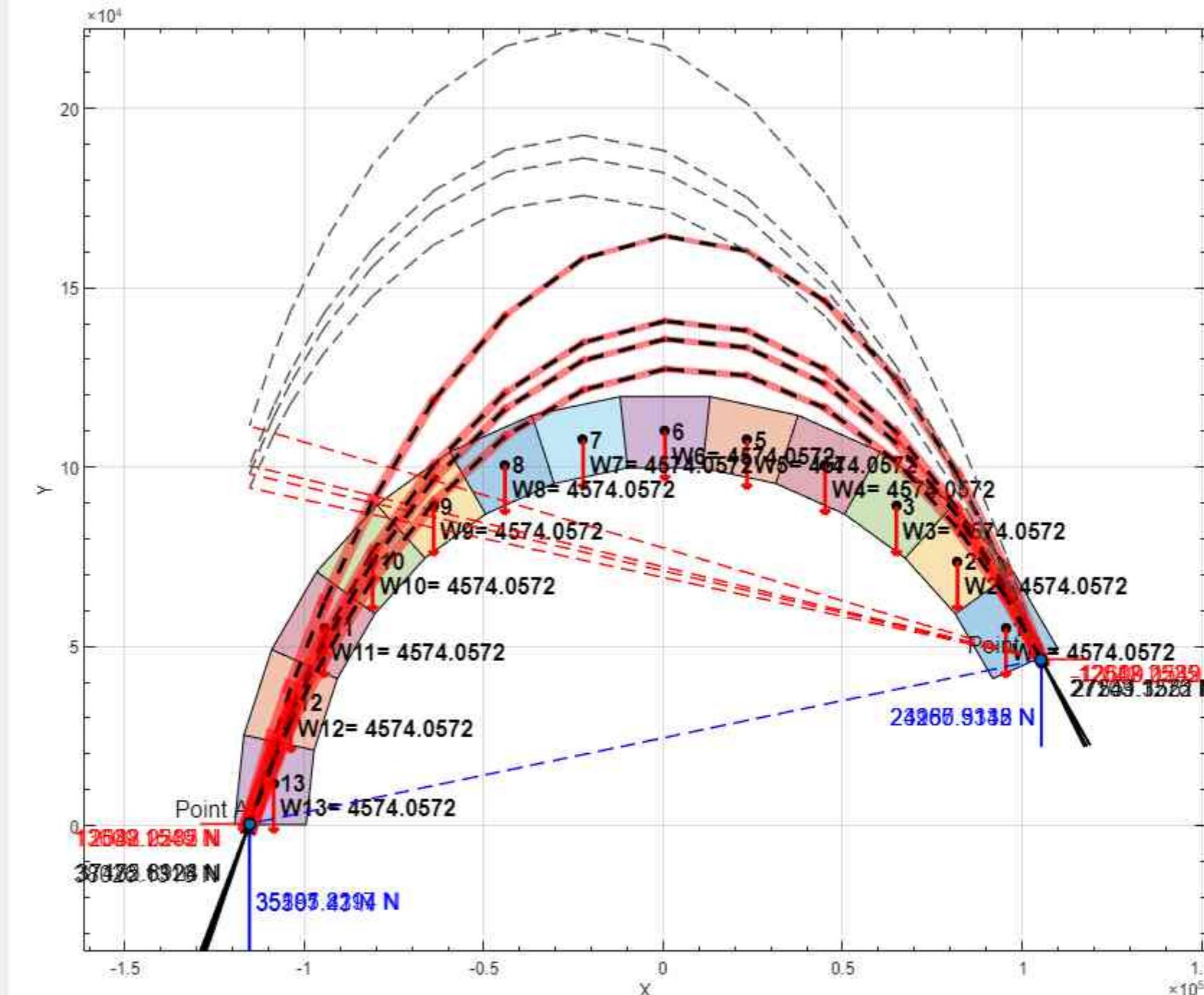
Horizontal Thrust

e+04	1.1e+04	1.2e+04	1.3e+04	1.4e+04	1.5e+04
------	---------	---------	---------	---------	---------

ID	Thrust
1	2.7551e+04
2	2.3682e+04
3	2.0111e+04
4	1.7027e+04
5	1.4739e+04
6	1.3652e+04
7	1.4049e+04
8	1.5818e+04
9	1.8572e+04
10	2.1942e+04
11	2.5687e+04
12	2.9665e+04
13	3.3795e+04
14	3.8026e+04

Interactive Area

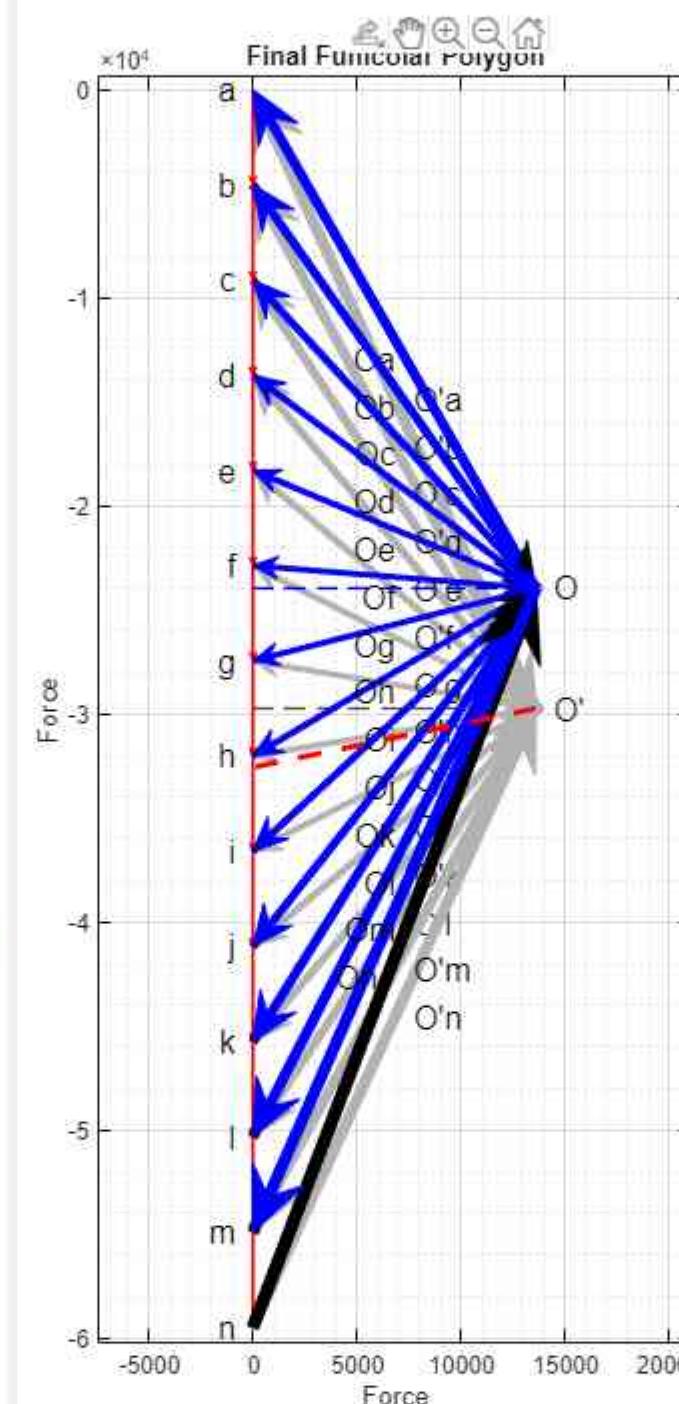
Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Graphics	Save/Load Example	Blocks properties	Units	Plot blocks	Plot Forces	Plot Reactions	forces factor 3	Force Magnitude Off <input type="radio"/> On
Plot Sketch	Plot Background Image	Flip Y axis	alpha W 0	Background Image Off <input type="radio"/> On	Sketched Geometry Off <input type="radio"/> On	Text / Labels Off <input type="radio"/> On	Force shrink factor 0	
Clear Interactive Area				Clear Sketch				

Force Polygon

Reset View Show Force Scale



Graphics	Tab2	Force shrink factor 0
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Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust $1.403e+04$

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min $1e+04$ max $1.5e+1$ Update Slider

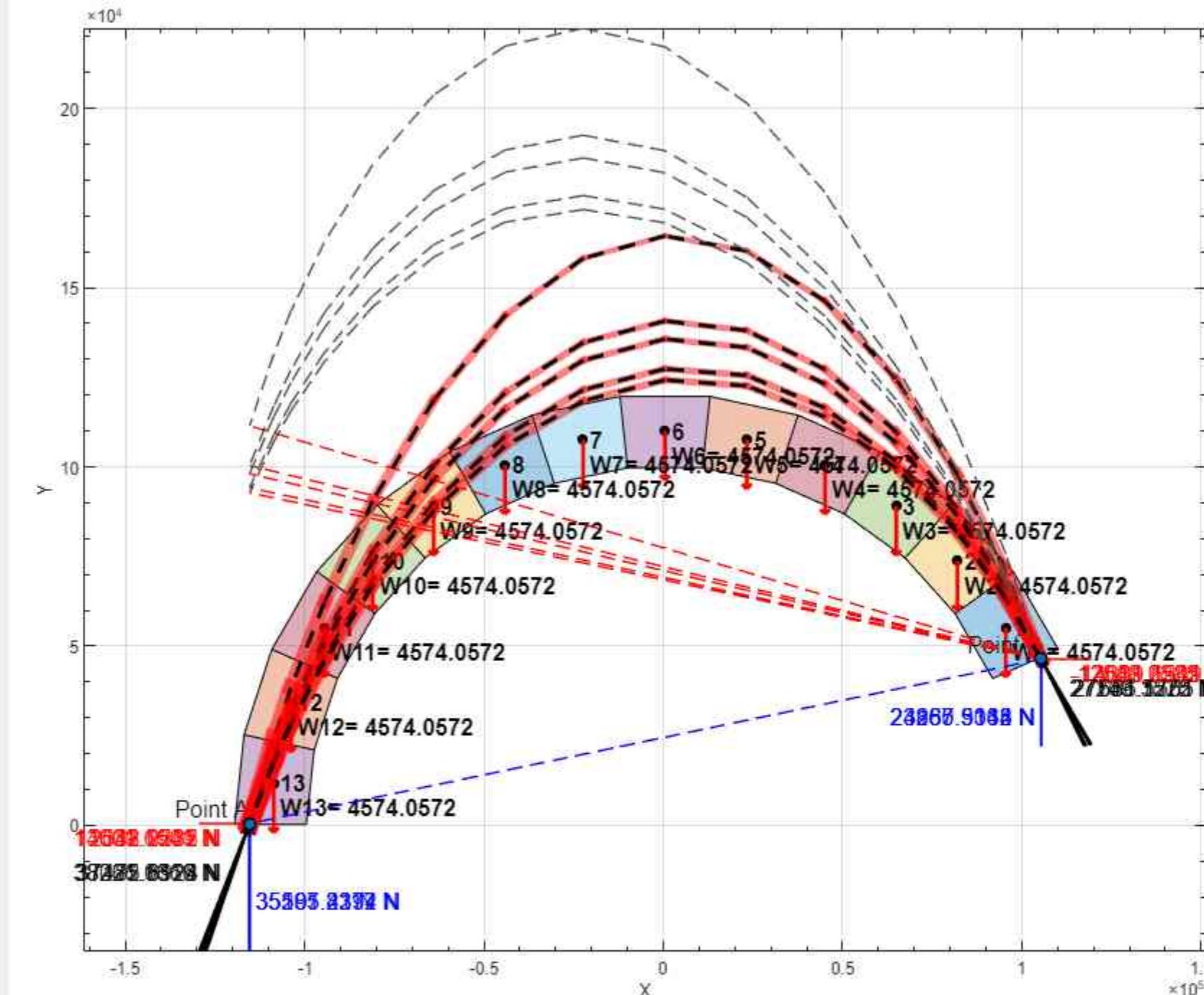
Horizontal Thrust

$e+04$ $1.1e+04$ $1.2e+04$ $1.3e+04$ $1.4e+04$ $1.5e+04$

ID	Thrust
1	$2.7687e+04$
2	$2.3856e+04$
3	$2.0336e+04$
4	$1.7315e+04$
5	$1.5097e+04$
6	$1.4067e+04$
7	$1.4480e+04$
8	$1.6227e+04$
9	$1.8942e+04$
10	$2.2274e+04$
11	$2.5987e+04$
12	$2.9939e+04$
13	$3.4047e+04$
14	$3.8261e+04$

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Graphics Save/Load Example Blocks properties Units

Plot blocks Plot Forces Plot Reactions forces factor 3 Force Magnitude Off On

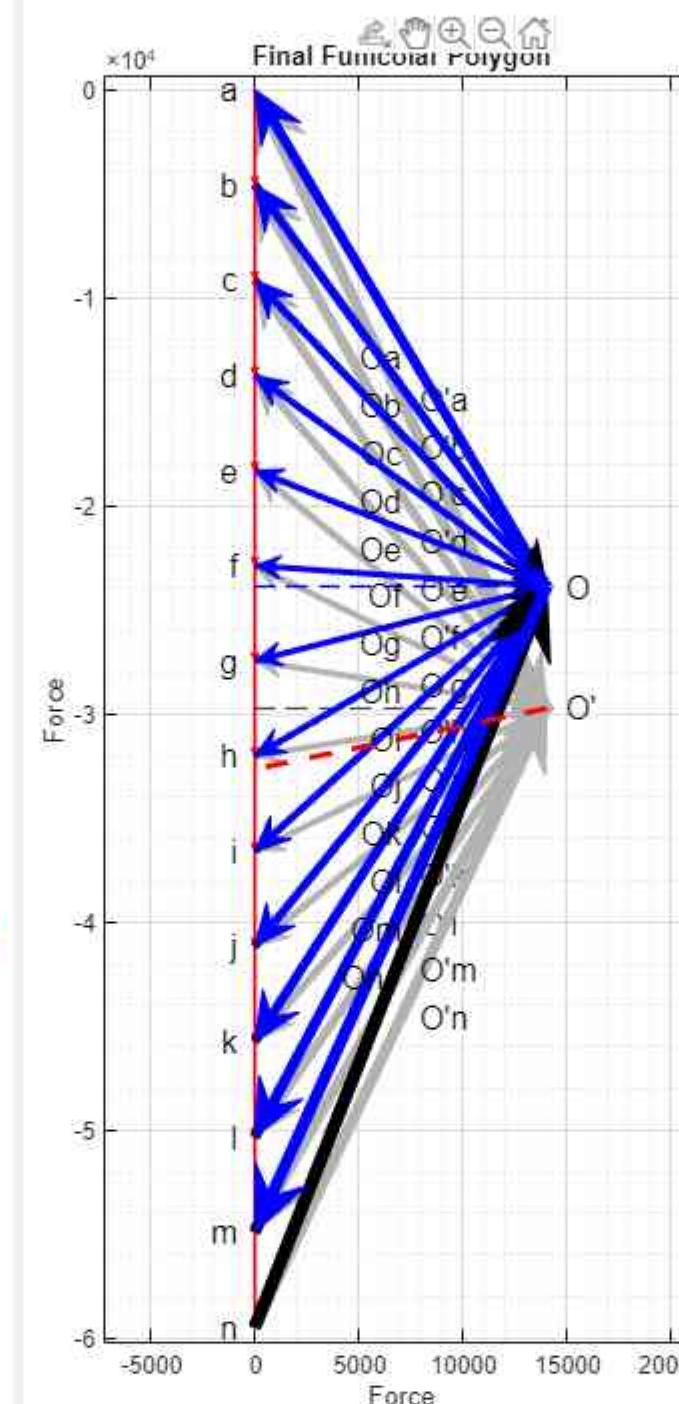
Plot Sketch Plot Background Image Flip Y axis alpha W 0 Background Image Off On

Clear Interactive Area Clear Sketch Sketched Geometry Off On

Text / Labels Off On

Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor 0

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.452e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min 1e+04 max 1.5e+1 Update Slider

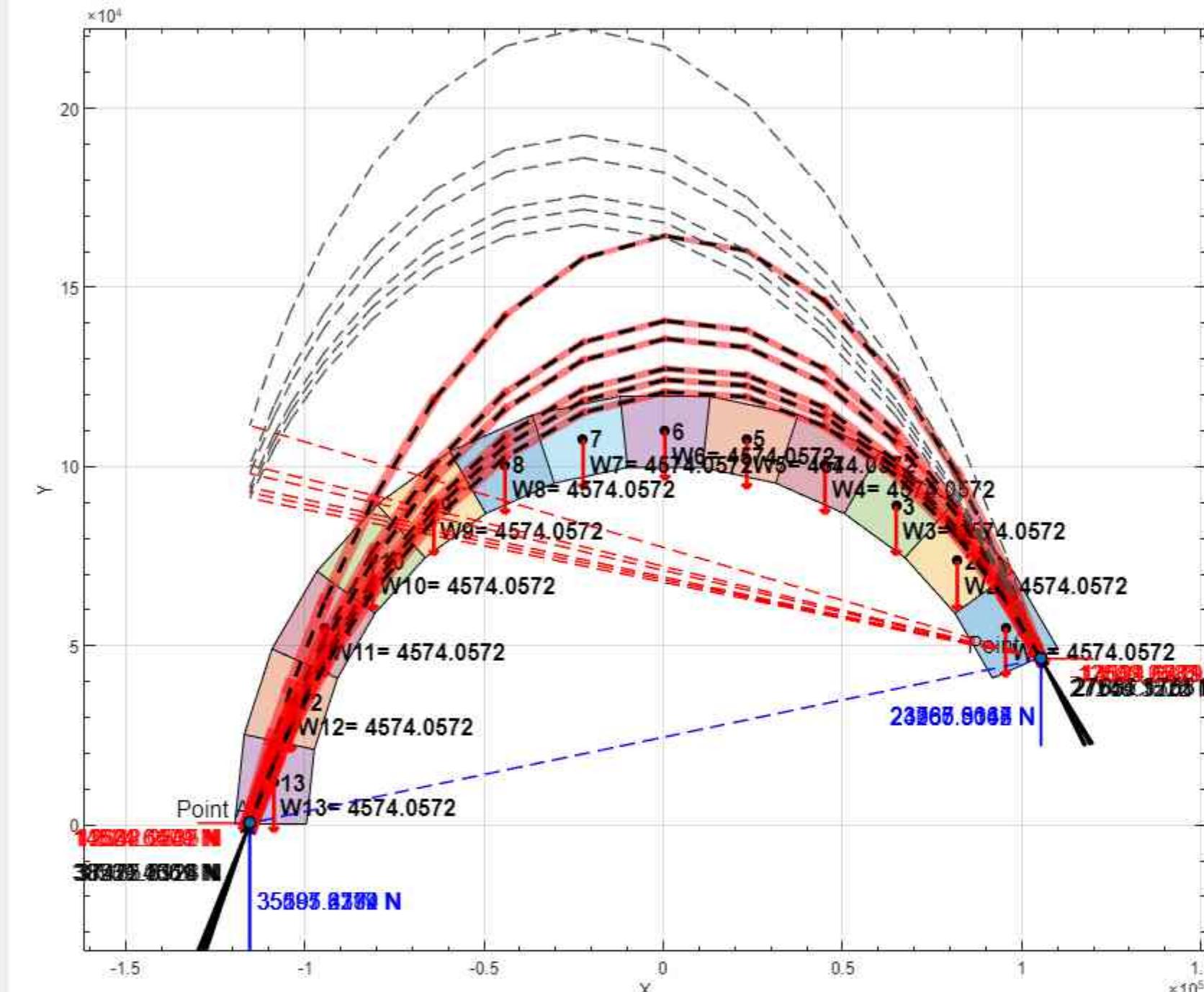
Horizontal Thrust

e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7852e+04
2	2.4068e+04
3	2.0606e+04
4	1.7659e+04
5	1.5520e+04
6	1.4552e+04
7	1.4983e+04
8	1.6706e+04
9	1.9378e+04
10	2.2667e+04
11	2.6342e+04
12	3.0263e+04
13	3.4346e+04
14	3.8539e+04

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale

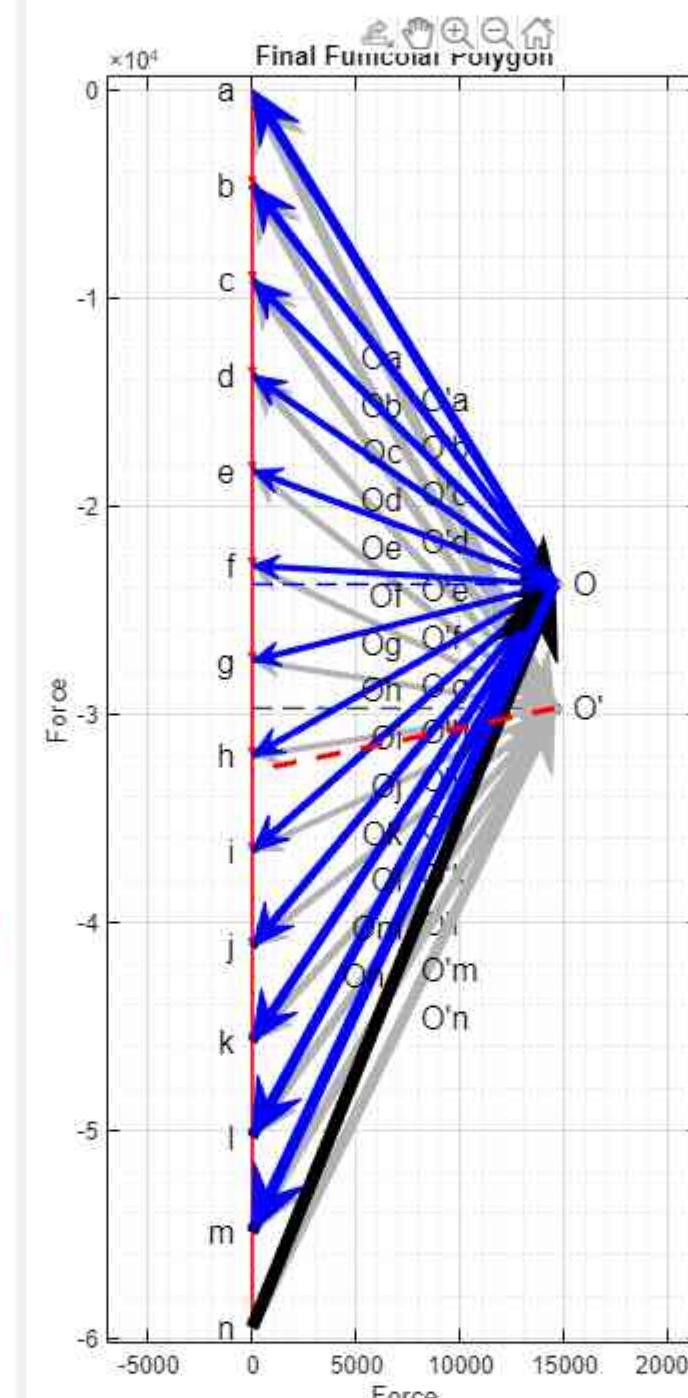


Graphics Save/Load Example Blocks properties Units

Plot blocks Plot Forces Plot Reactions forces factor 3 Force Magnitude Off On
 Plot Sketch Plot Background Image Flip Y axis alpha W 0 Background Image Off On
 Clear Interactive Area Clear Sketch Sketched Geometry Off On
 Text / Labels Off On

Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor 0

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.493e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 10

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min 1e+04 max 1.5e+1 Update Slider

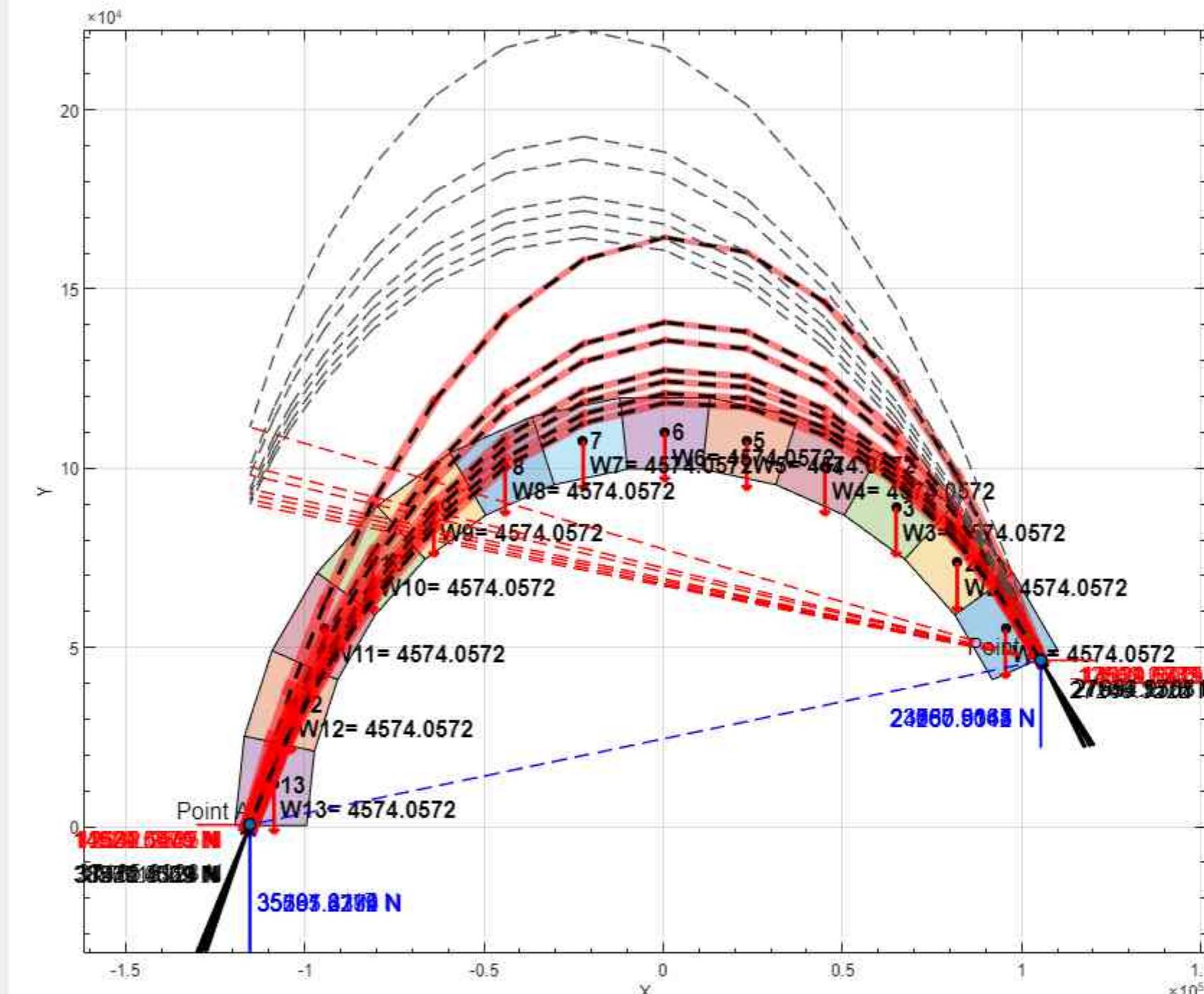
Horizontal Thrust

e⁴ 1.1e⁴ 1.2e⁴ 1.3e⁴ 1.4e⁴ 1.5e⁴

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Graphics Save/Load Example Blocks properties Units

Plot blocks Plot Forces Plot Reactions forces factor 3 Force Magnitude Off On

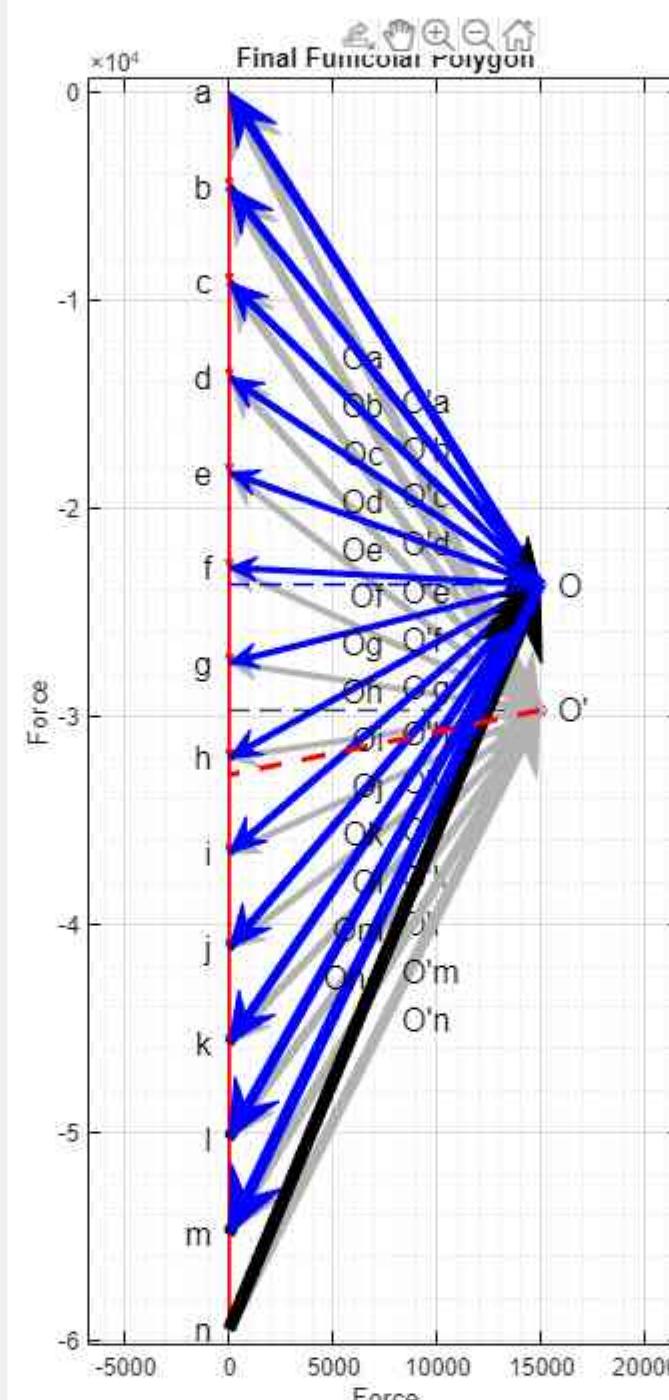
Plot Sketch Plot Background Image Flip Y axis alpha W 0 Background Image Off On

Clear Interactive Area Clear Sketch Sketched Geometry Off On

Text / Labels Off On

Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor 0

Arch Definition **Thrust Line** **Mechanism**

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.493e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor: 10

Cable analogy

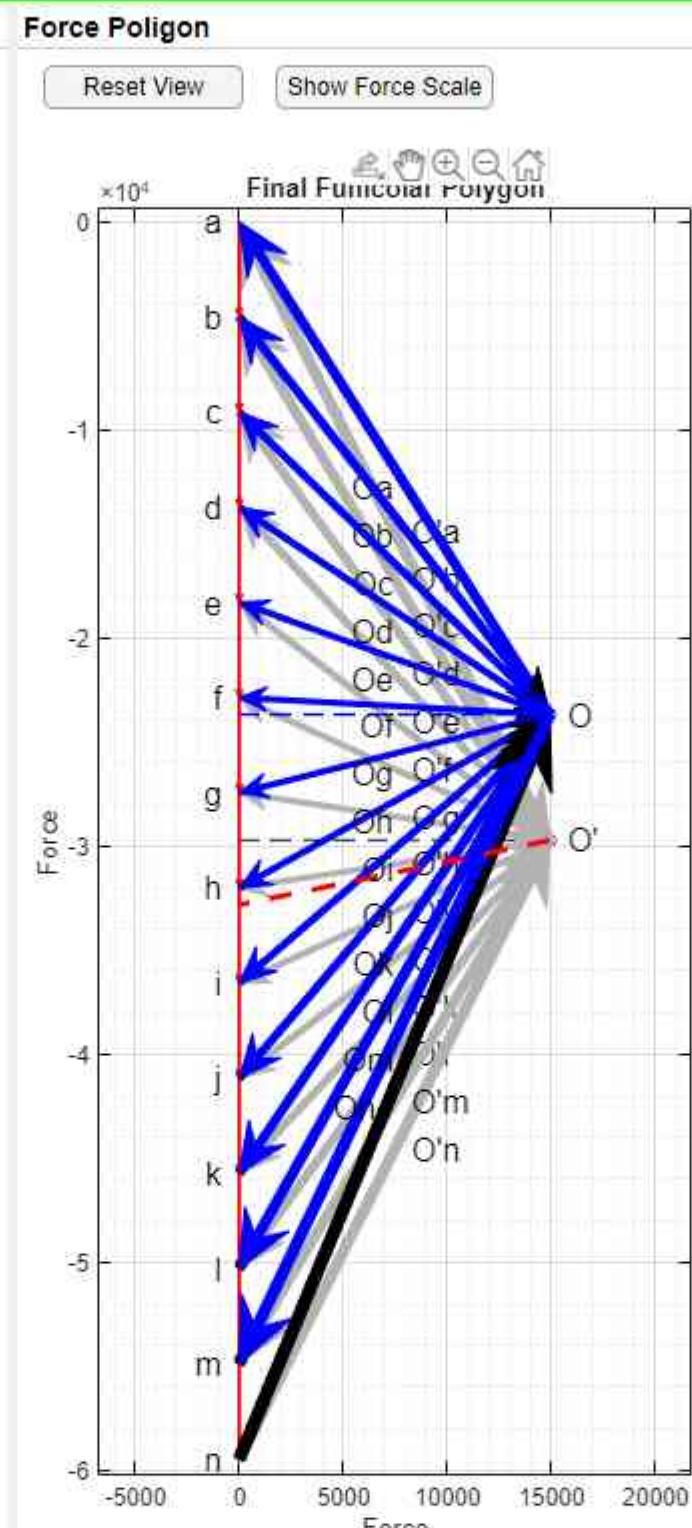
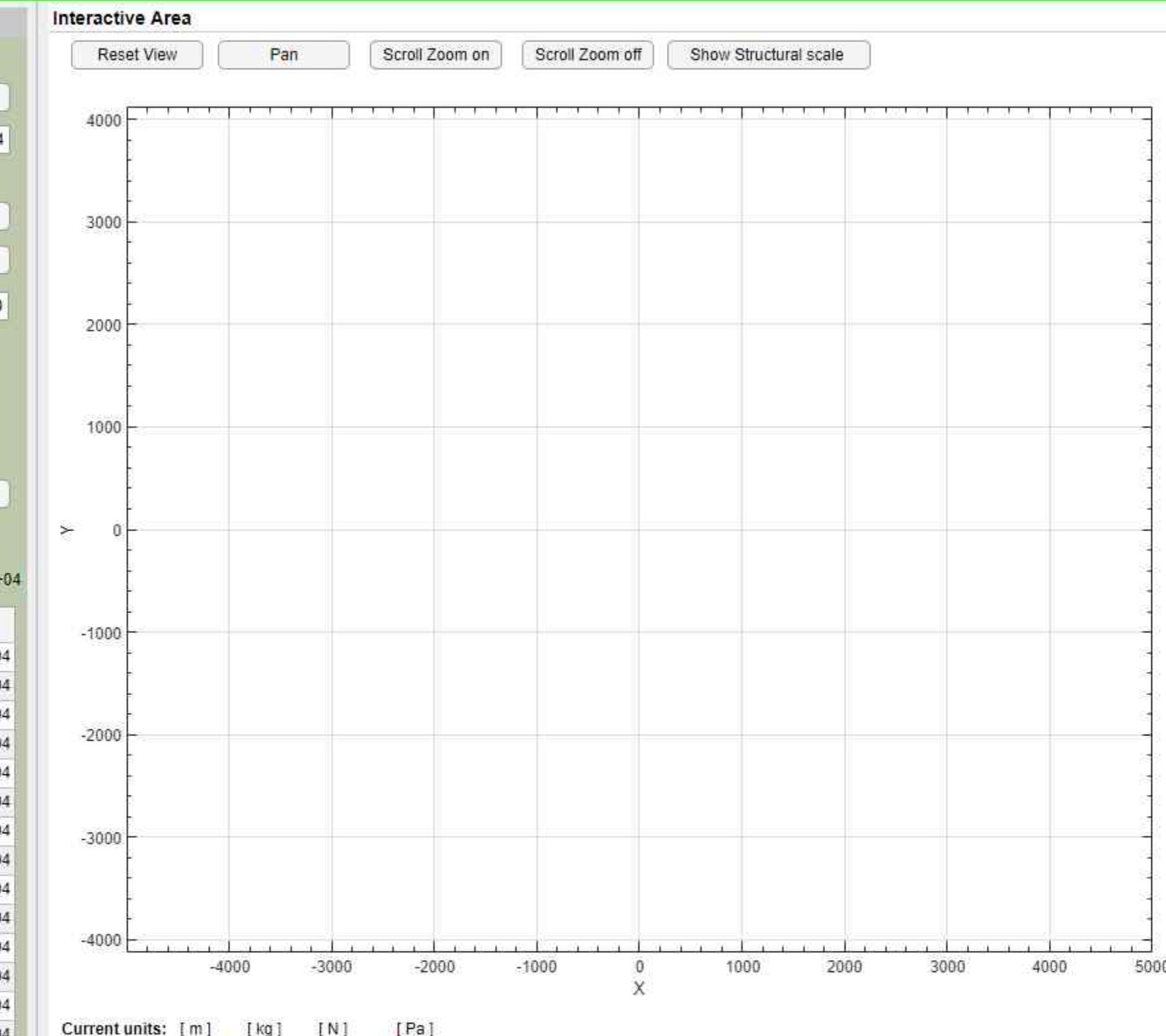
Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min: 1e+04 max: 1.5e+04 Update Slider

Horizontal Thrust: 1.493e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04



Graphics Save/Load Example Blocks properties Units

Plot blocks Plot Forces Plot Reactions forces factor: 3 Force Magnitude Off: On

Plot Sketch Plot Background Image Flip Y axis alpha W: 0 Background Image Off: On

Clear Interactive Area Clear Sketch Sketched Geometry Off: On

Text / Labels Off: On

Graphics Tab2

Force shrink factor: 0

Arch Definition **Thrust Line** **Mechanism**

Unknowns

Define Point A Define Point B

Define Horizontal Thrust

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor

Cable analogy

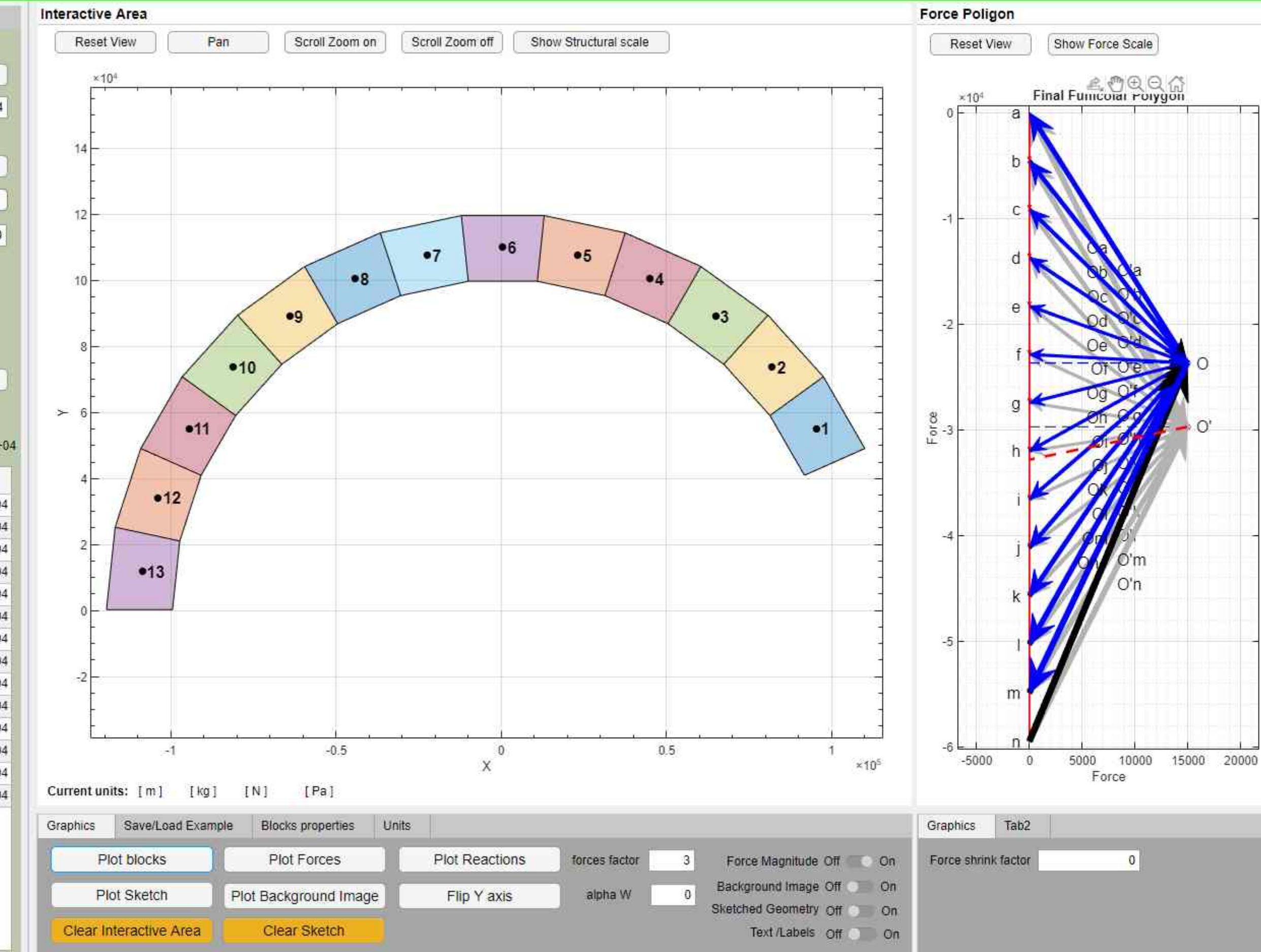
Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min max Update Slider

Horizontal Thrust

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04



Arch Definition **Thrust Line** **Mechanism**

Unknowns

Define Point A Define Point B

Define Horizontal Thrust

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP **Final FUP**

LOT Force factor:

Cable analogy

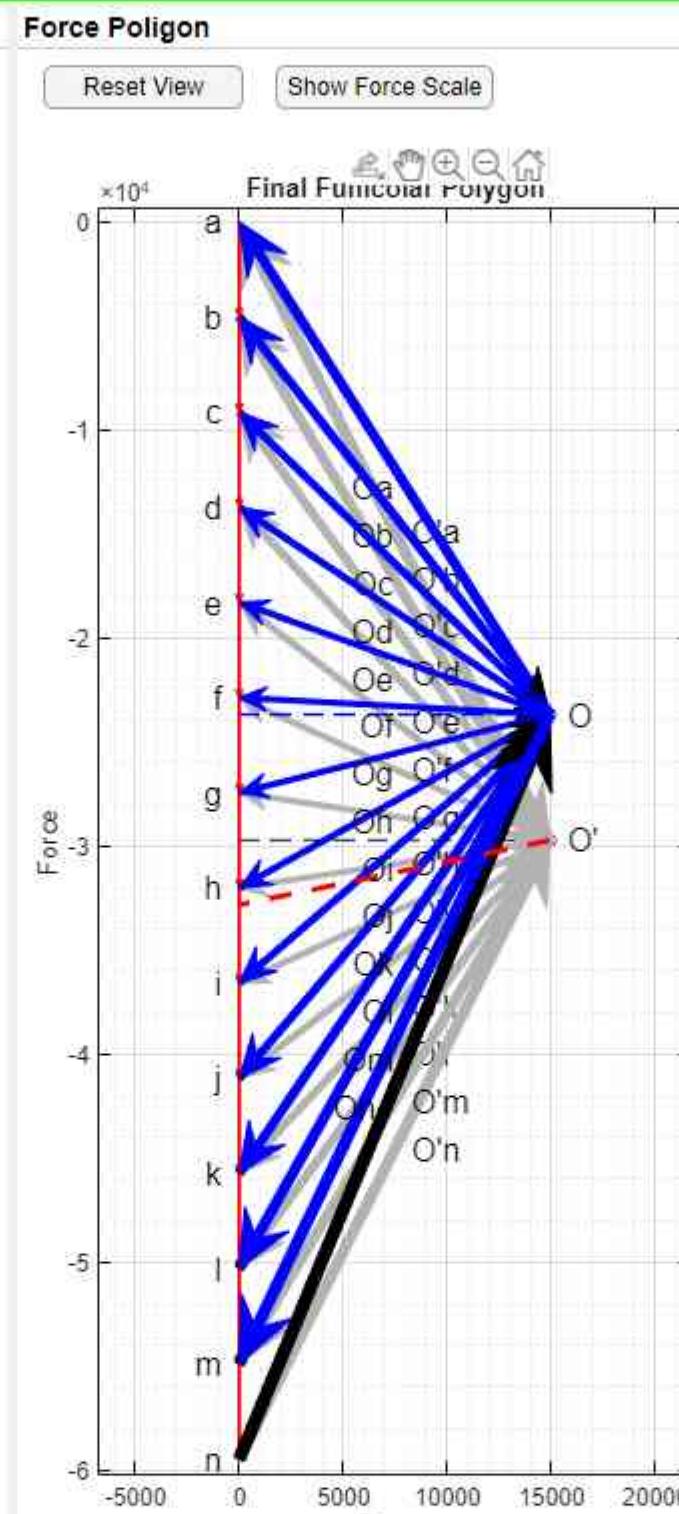
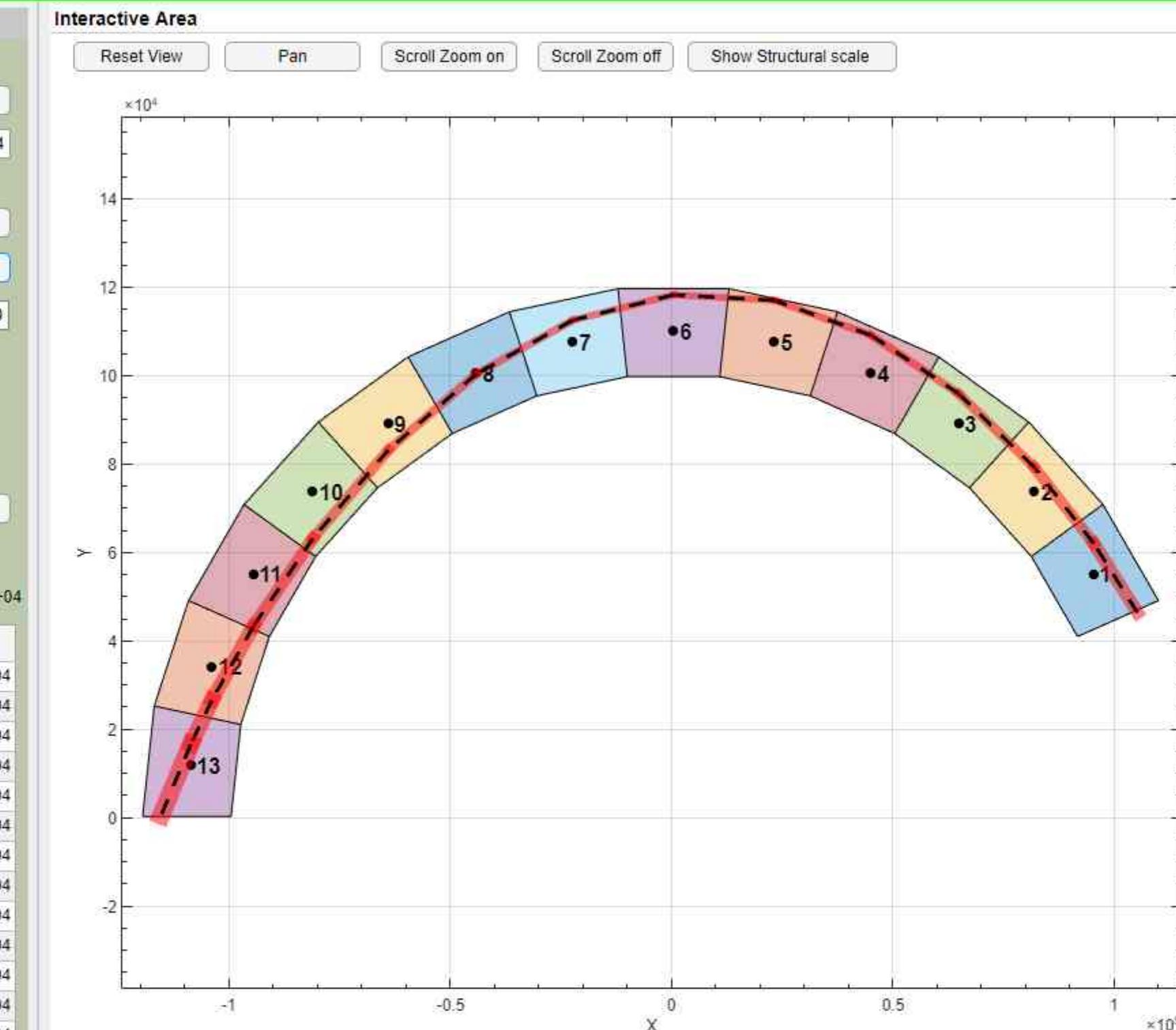
Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min: max: Update Slider

Horizontal Thrust:

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04



Graphics Save/Load Example Blocks properties Units

Plot blocks Plot Forces Plot Reactions forces factor: Force Magnitude Off: On

Plot Sketch Plot Background Image Flip Y axis alpha W: Background Image Off: On

Clear Interactive Area Clear Sketch Sketched Geometry Off: On

Text / Labels Off: On

Graphics Tab2

Force shrink factor:

Arch Definition **Thrust Line** **Mechanism**

Unknowns

Define Point A Define Point B

Define Horizontal Thrust

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor:

Cable analogy

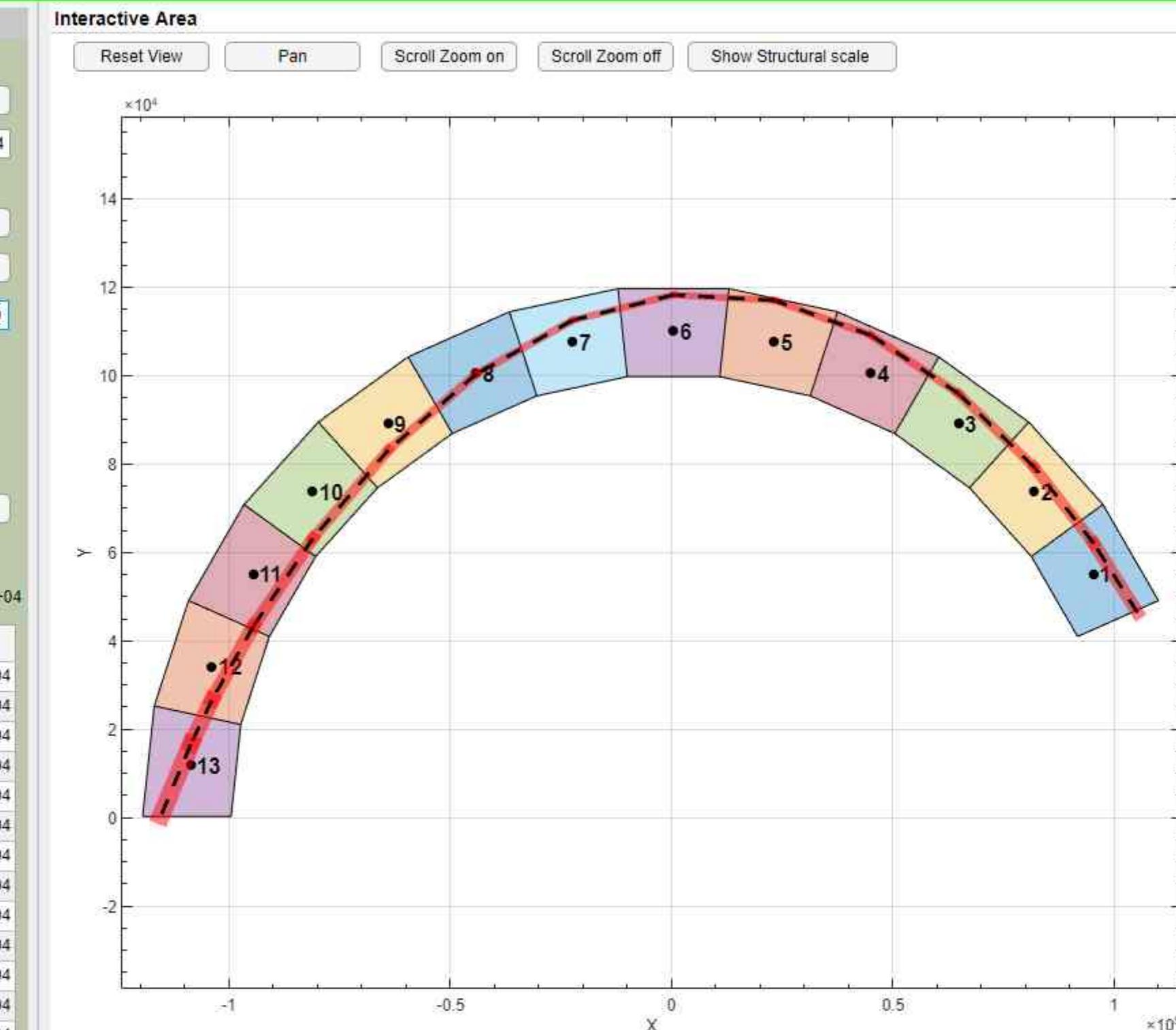
Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min: max: Update Slider

Horizontal Thrust:

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04



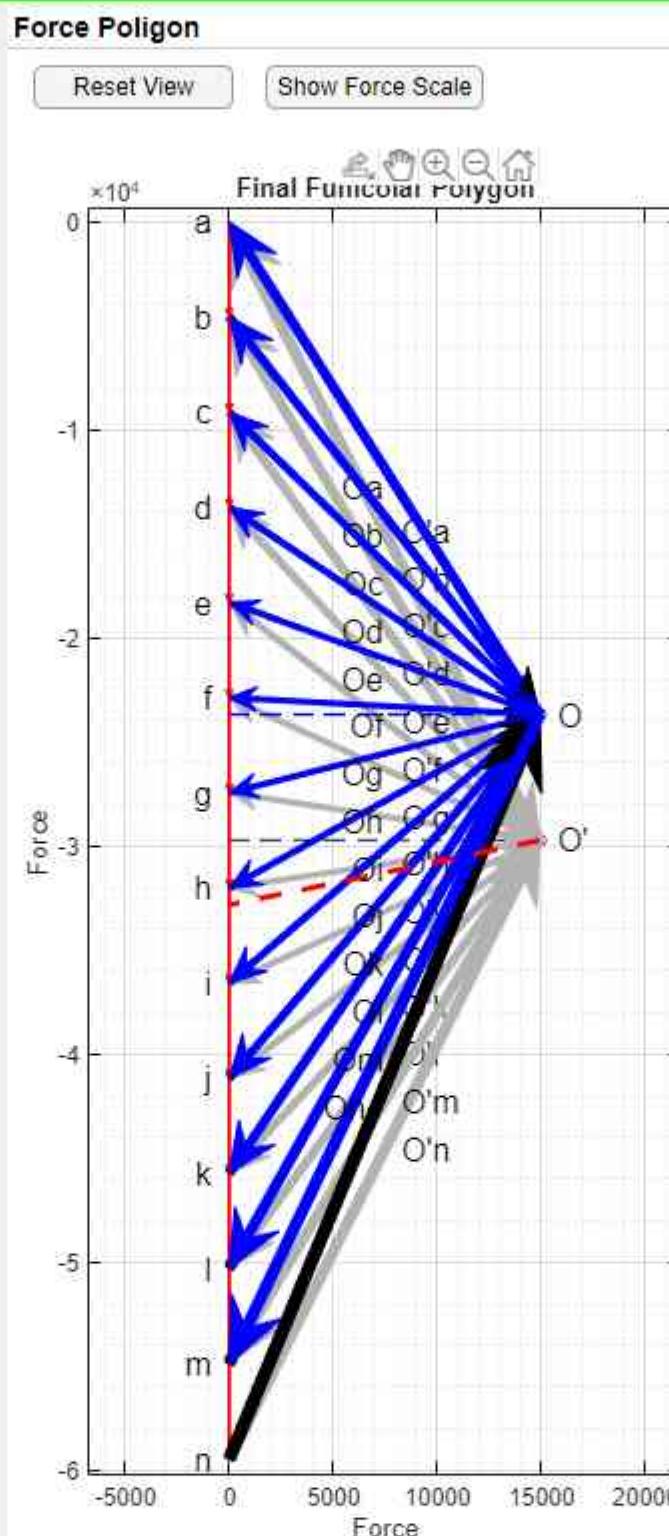
Graphics Save/Load Example Blocks properties Units

Plot blocks Plot Forces Plot Reactions forces factor: Force Magnitude Off: On

Plot Sketch Plot Background Image Flip Y axis alpha W: Background Image Off: On

Clear Interactive Area Clear Sketch Sketched Geometry Off: On

Text / Labels Off: On



Graphics Tab2

Force shrink factor:

Arch Definition **Thrust Line** **Mechanism**

Unknowns

Define Point A Define Point B

Define Horizontal Thrust

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor:

Cable analogy

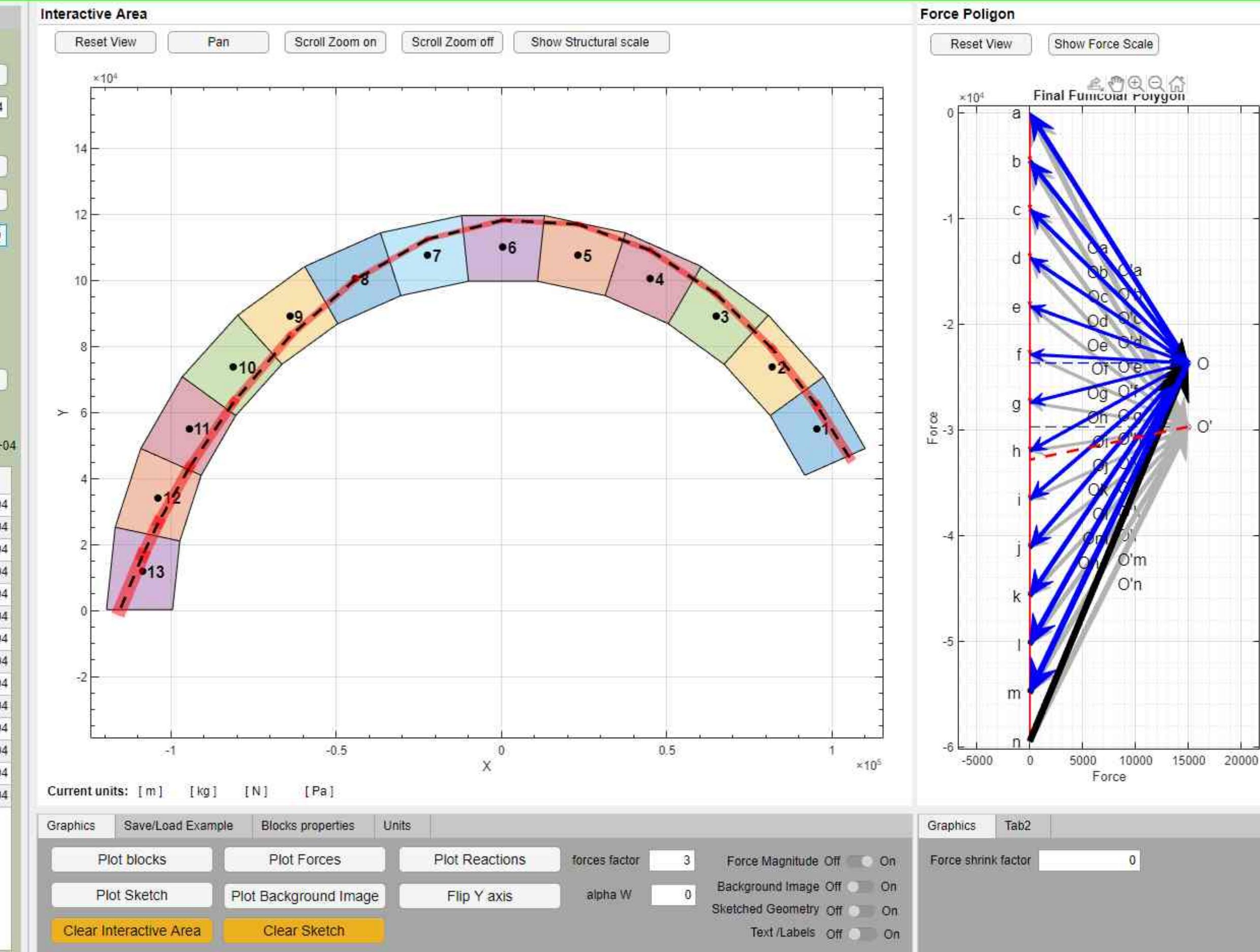
Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min: max: Update Slider

Horizontal Thrust:

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04



Arch Definition **Thrust Line** **Mechanism**

Unknowns

Define Point A Define Point B

Define Horizontal Thrust

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor:

Cable analogy

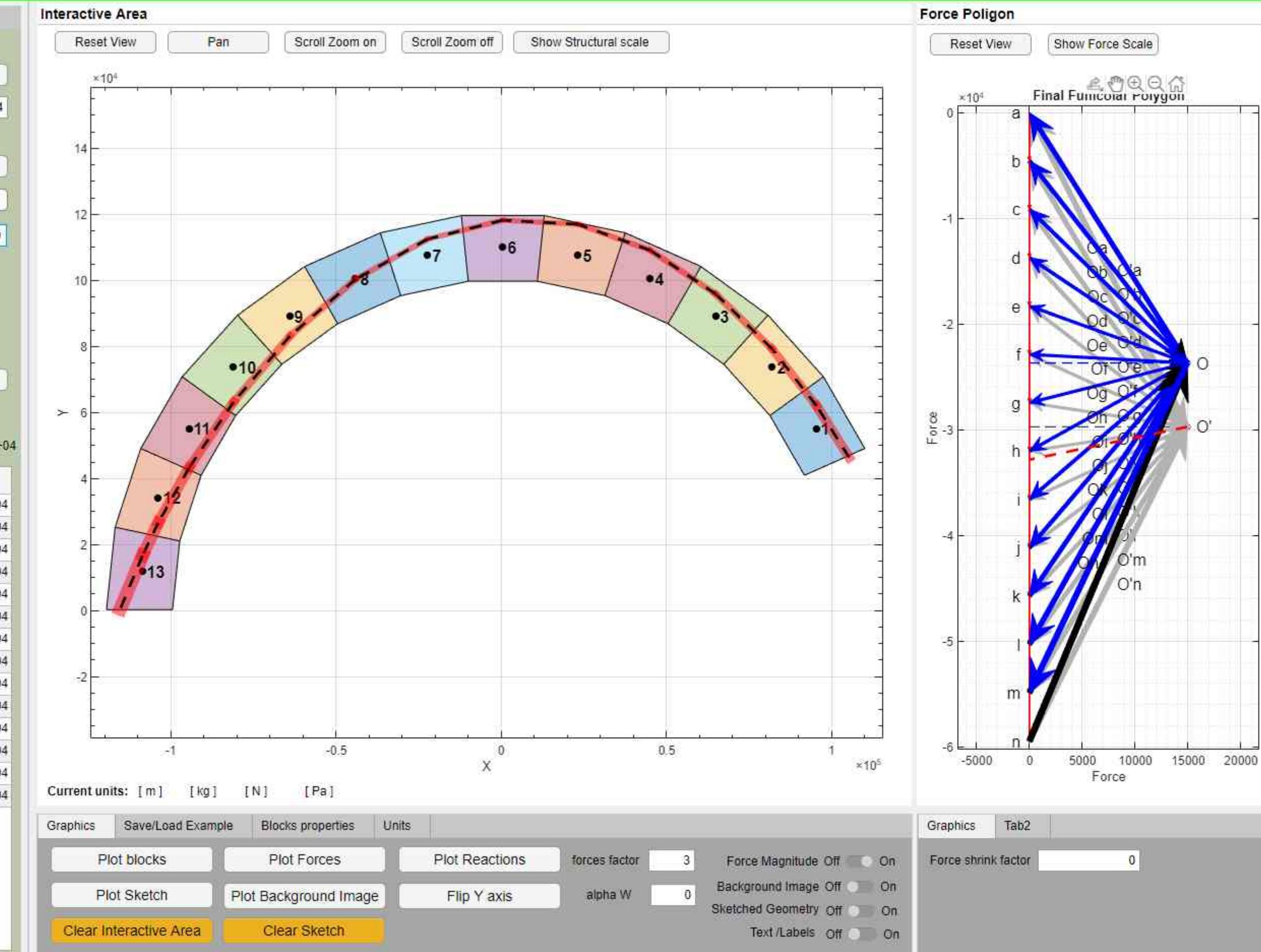
Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min: max: Update Slider

Horizontal Thrust:

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04



Arch Definition **Thrust Line** **Mechanism**

Unknowns

Define Point A Define Point B

Define Horizontal Thrust

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP **Final FUP**

LOT Force factor

Cable analogy

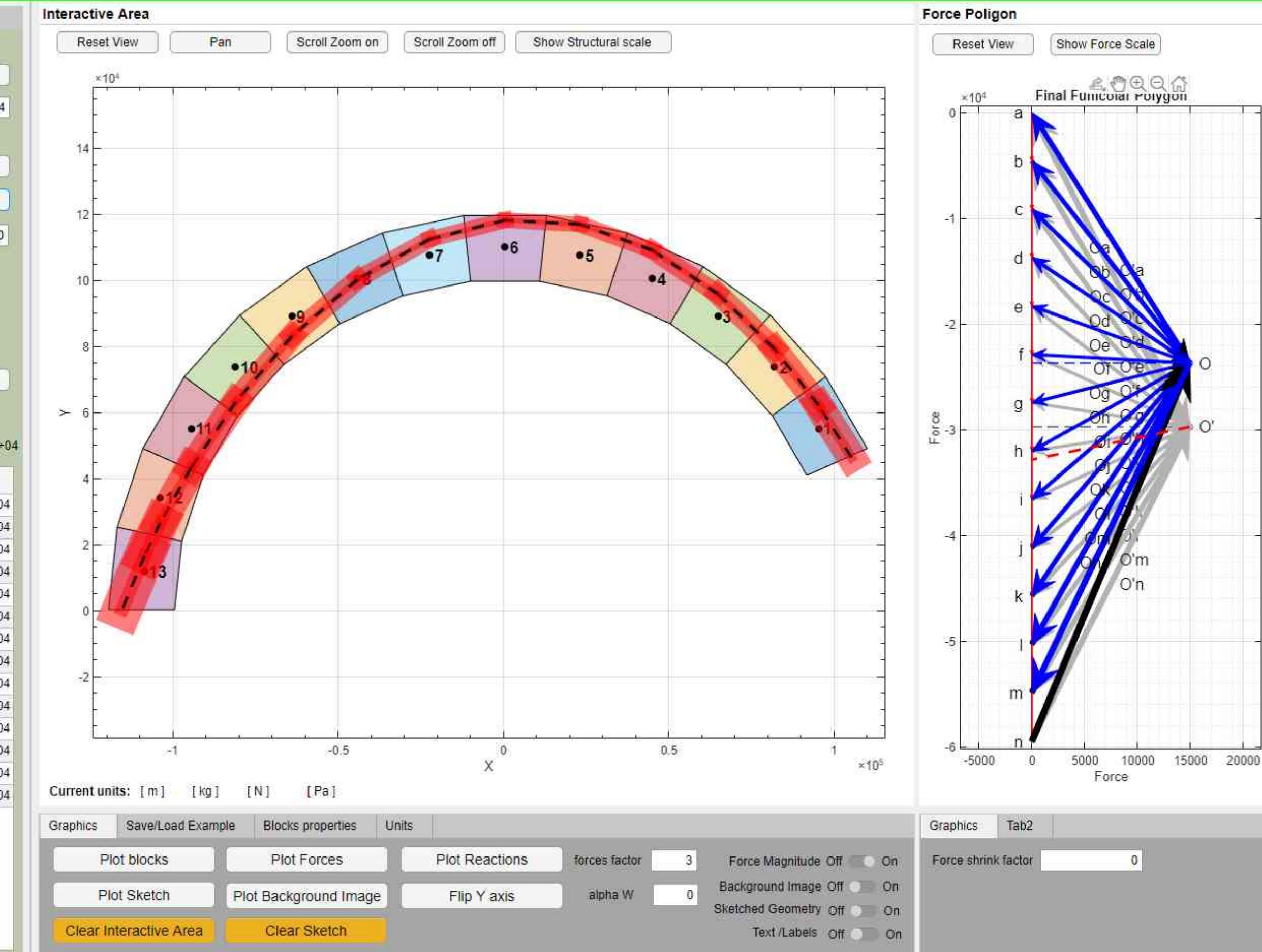
Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min max Update Slider

Horizontal Thrust

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04



Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust $1.493e+04$

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor:

Cable analogy

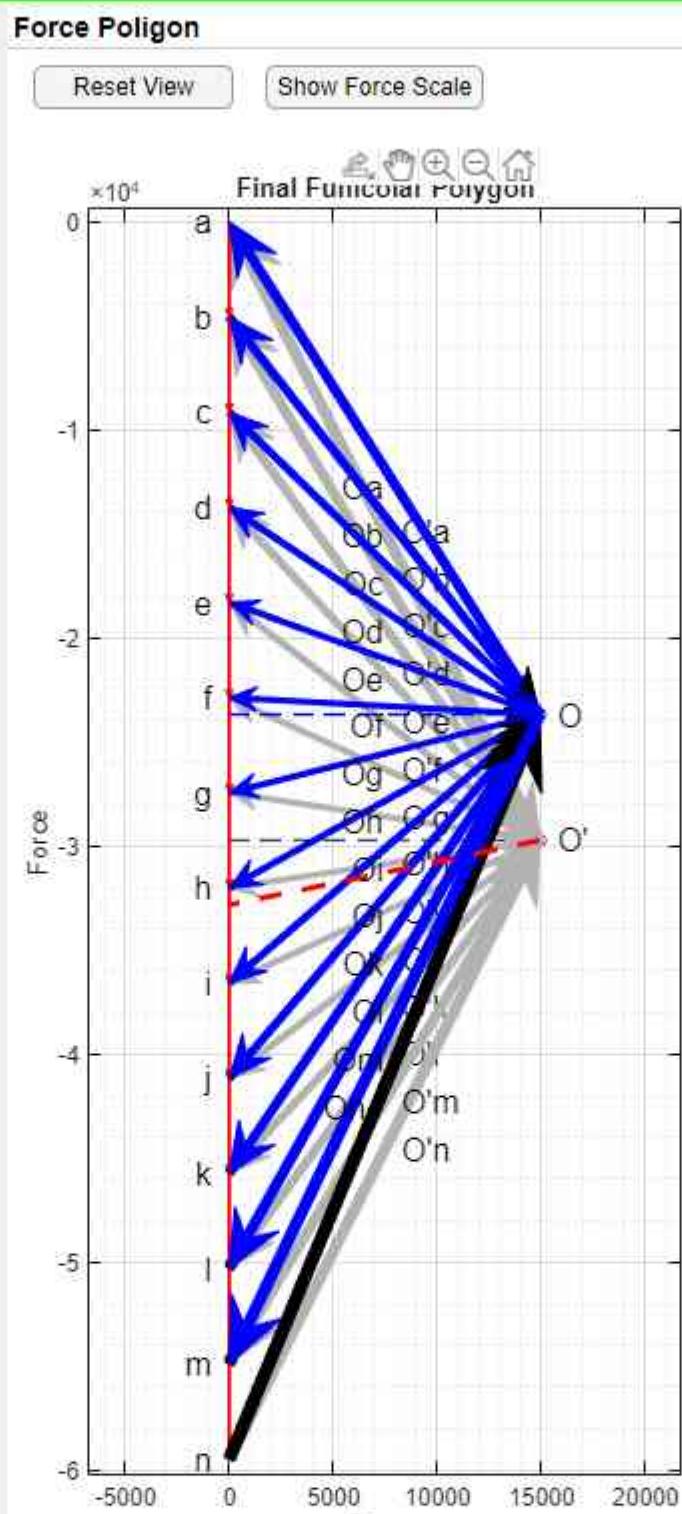
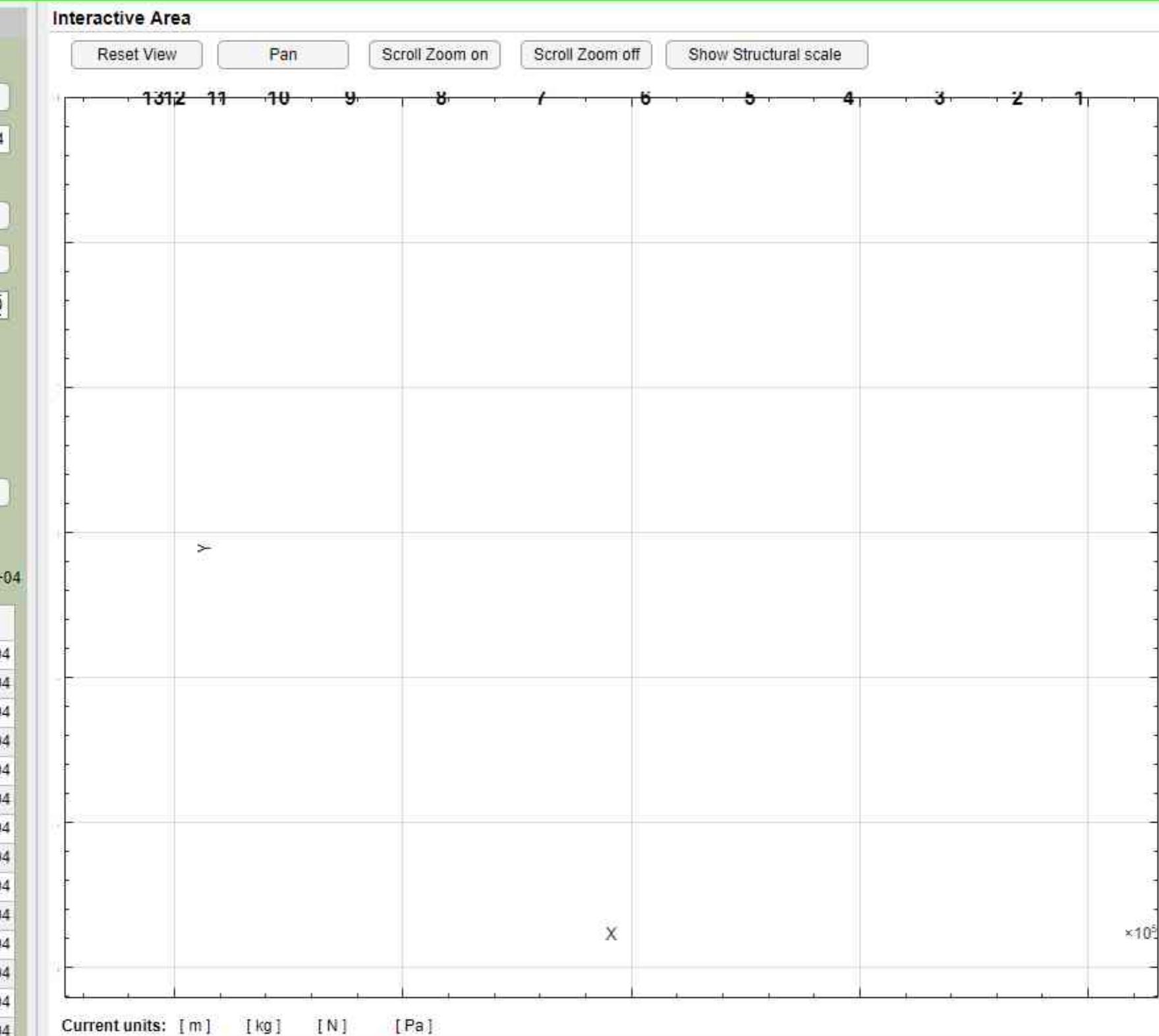
Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min: $1e+04$ max: $1.5e+04$ Update Slider

Horizontal Thrust: $1.493e+04$

ID	Thrust
1	$2.7994e+04$
2	$2.4248e+04$
3	$2.0835e+04$
4	$1.7946e+04$
5	$1.5871e+04$
6	$1.4952e+04$
7	$1.5397e+04$
8	$1.7100e+04$
9	$1.9738e+04$
10	$2.2992e+04$
11	$2.6637e+04$
12	$3.0533e+04$
13	$3.4595e+04$
14	$3.8772e+04$



Graphics Save/Load Example Blocks properties Units

Plot blocks Plot Forces Plot Reactions forces factor: Force Magnitude Off: On

Plot Sketch Plot Background Image Flip Y axis alpha W: Background Image Off: On

Clear Interactive Area Clear Sketch Sketched Geometry Off: On

Force shrink factor: Text / Labels Off: On

Graphics Tab2

Force shrink factor: Text / Labels Off: On

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.493e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor 30

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min 1e+04 max 1.5e+1 Update Slider

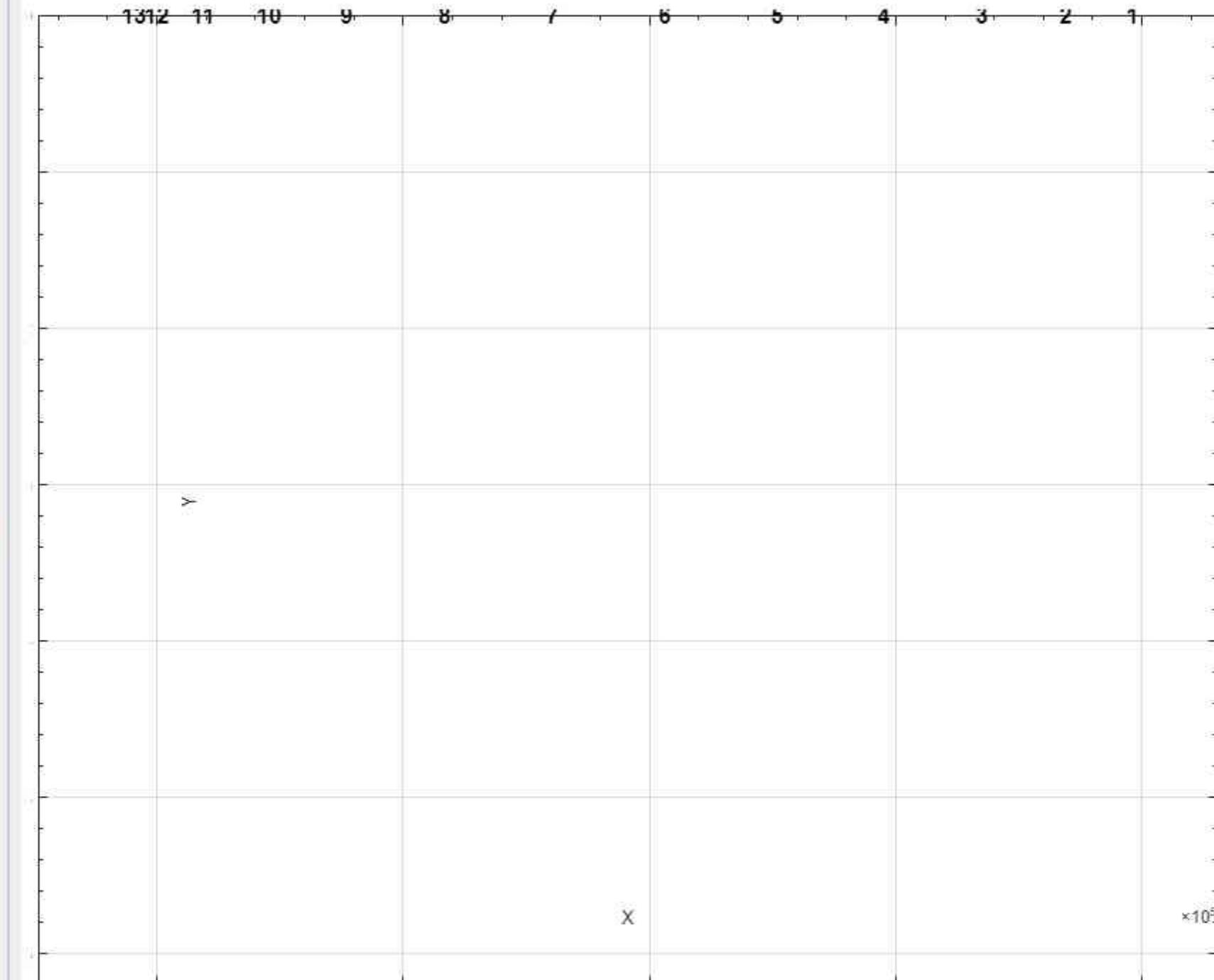
Horizontal Thrust



ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Graphics Save/Load Example Blocks properties Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3 Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

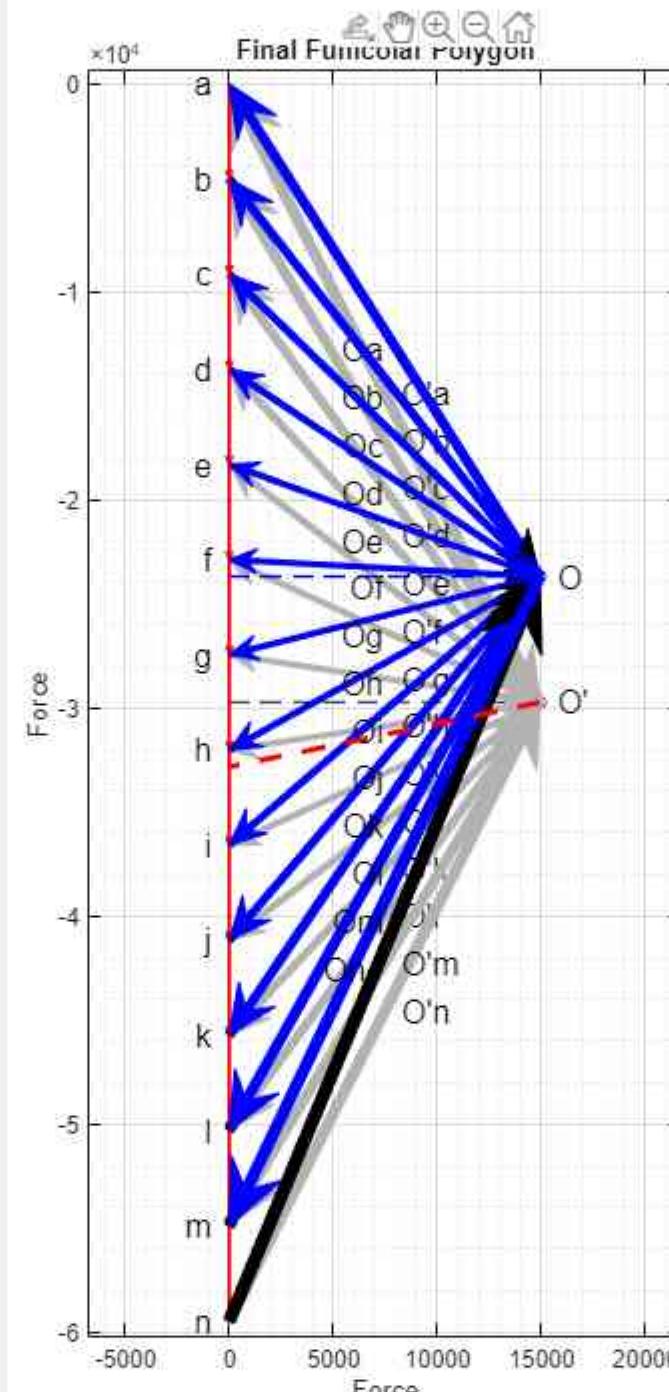
Background Image Off On
Sketched Geometry Off On
Text / Labels Off On

Clear Interactive Area

Clear Sketch

Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor 0

Arch Definition Thrust Line Mechanism

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.493e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor: .0001

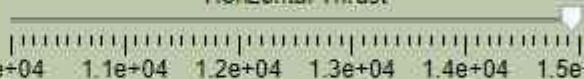
Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min: 1e+04 max: 1.5e+1 Update Slider

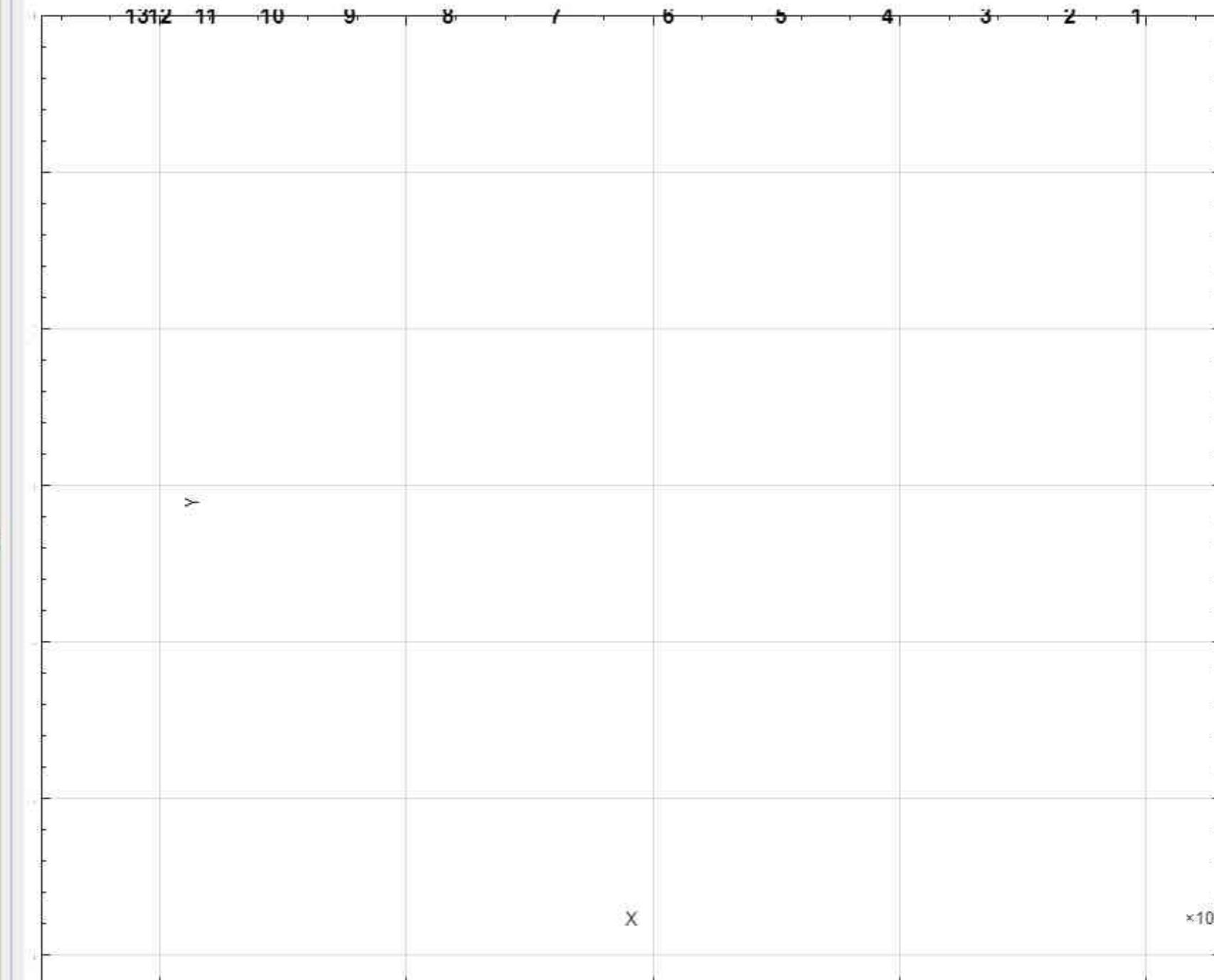
Horizontal Thrust



ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Graphics Save/Load Example Blocks properties Units

Plot blocks

Plot Forces

Plot Reactions

forces factor: 3 Force Magnitude Off: On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W: 0

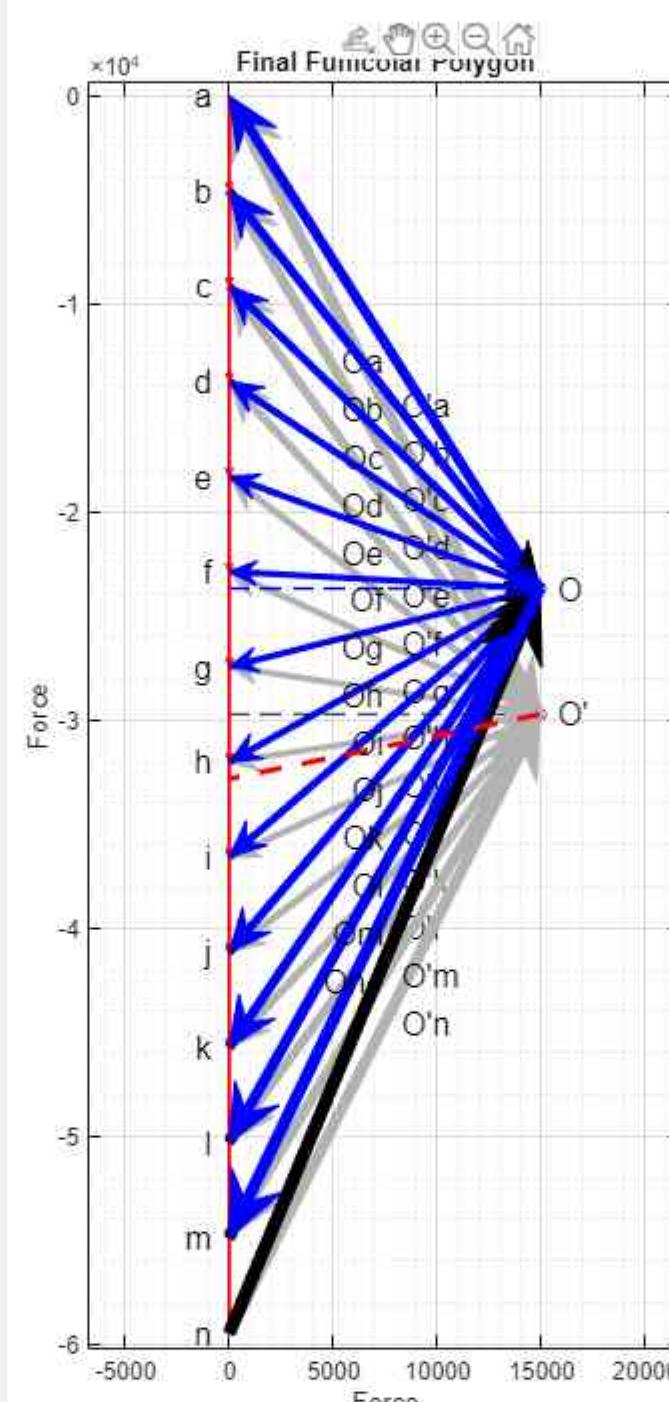
Background Image Off: On
Sketched Geometry Off: On
Text / Labels Off: On

Clear Interactive Area

Clear Sketch

Force Polygon

Reset View Show Force Scale



Graphics Tab2

Force shrink factor: 0

Arch Definition **Thrust Line** **Mechanism**

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.493e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor: 0.0001

Cable analogy

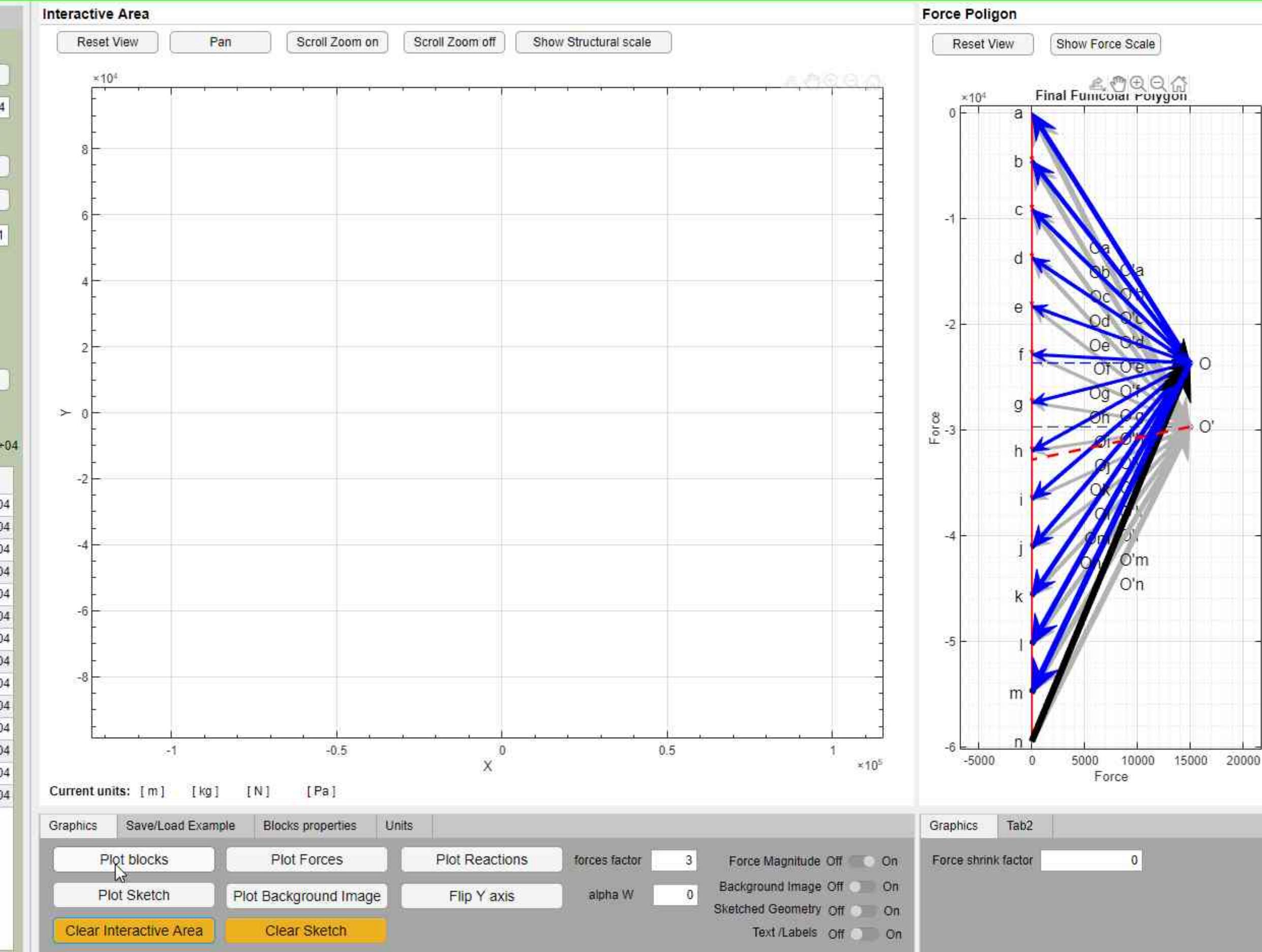
Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min: 1e+04 max: 1.5e+04 Update Slider

Horizontal Thrust: 1.493e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
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13	3.4595e+04
14	3.8772e+04



Arch Definition **Thrust Line** **Mechanism**

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.493e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor: 0.0001

Cable analogy

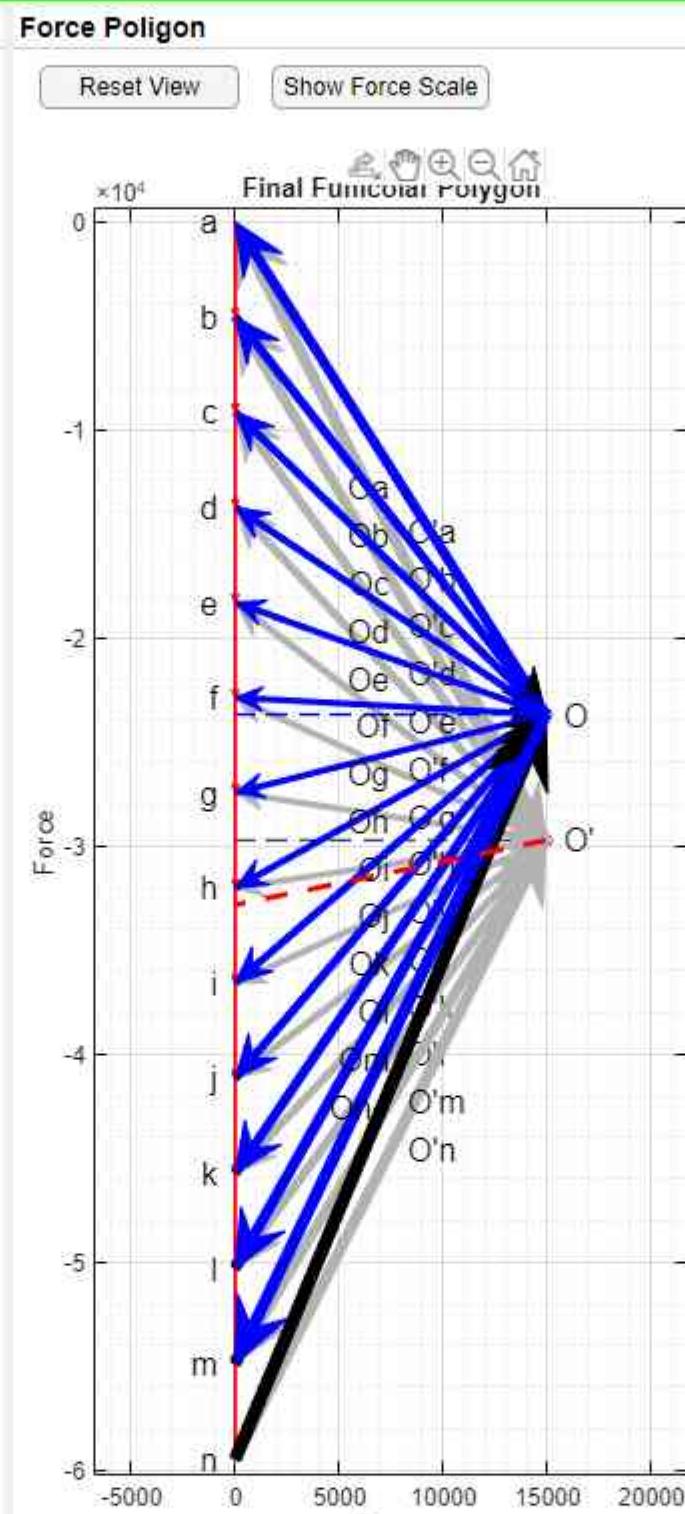
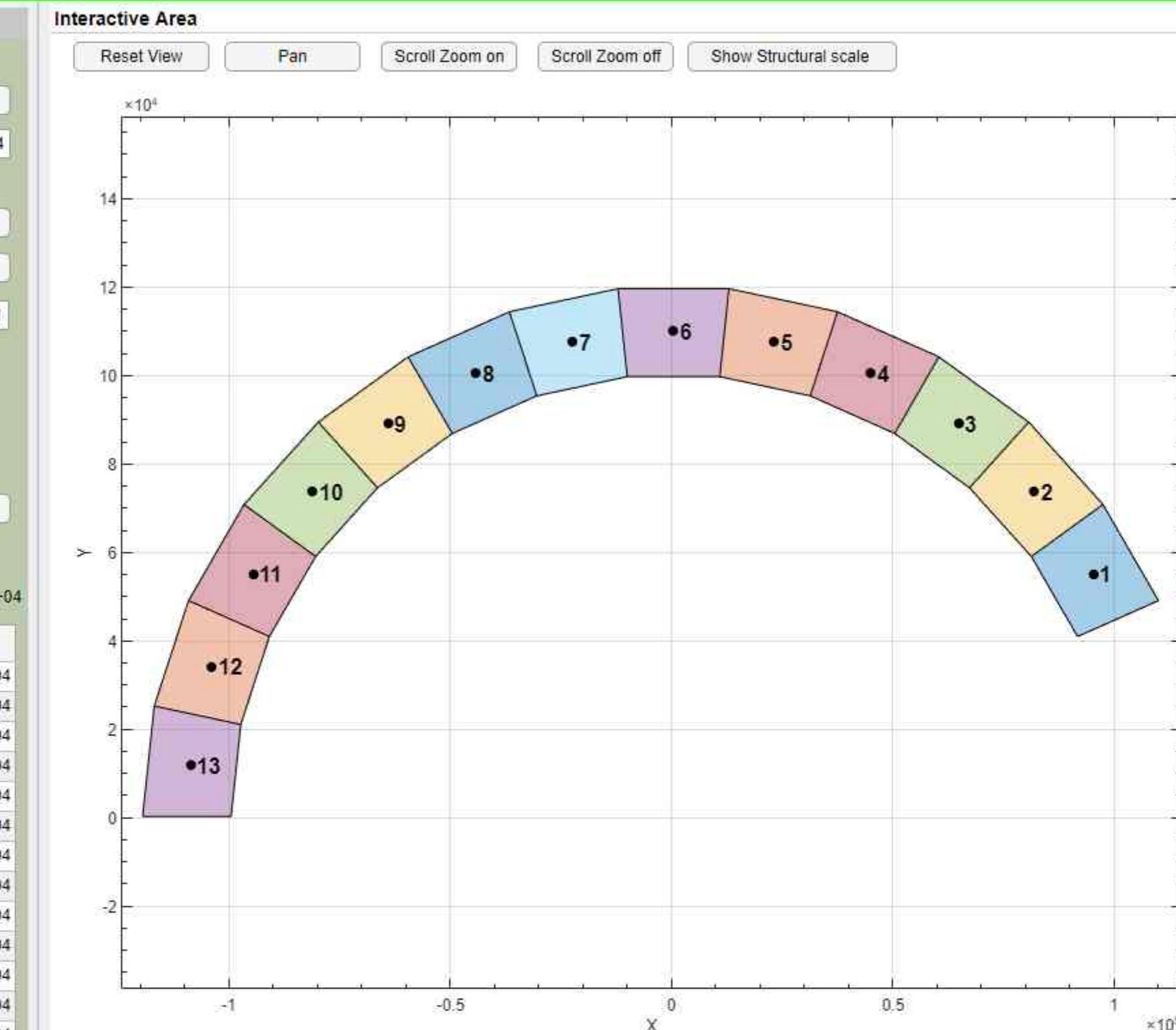
Plot Cable Analogy

Interactive FUP (find the Line of Thrust)

min: 1e+04 max: 1.5e+1 Update Slider

Horizontal Thrust: 1.493e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04



Graphics Save/Load Example Blocks properties Units

Plot blocks Plot Forces Plot Reactions forces factor: 3 Force Magnitude Off: On

Plot Sketch Plot Background Image Flip Y axis: 0 Background Image Off: On

Clear Interactive Area Clear Sketch alpha W: 0 Sketched Geometry Off: On

Text / Labels Off: On

Graphics Tab2

Force shrink factor: 0

Arch Definition **Thrust Line** **Mechanism**

Unknowns

Define Point A Define Point B

Define Horizontal Thrust 1.493e+04

Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP Preliminary FUP

Final FOP Final FUP

LOT Force factor: 0.0001

Cable analogy

Plot Cable analogy

Interactive FUP (find the Line of Thrust)

min: 1e+04 max: 1.5e+1 Update Slider

Horizontal Thrust

e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
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12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

