

DESIGNING OPTIMAL TRUSS-STRUCTURED BRIDGE

Node

X Coordinate

0

Element

Node1

0

NodeLabel

On

Off

Y Coordinate

0

Node2

0

ElementLabel

On

Off

GenerateNode

GenerateElement

NumberofNodes

0

NumberofElements

0

ReadNL&EL

RemoveAll

Show NL&EL Table

Options

Tables

Options

Initialize BC

Off

On

Size

1 10 19 28 37 46 55 64 73 82 91 100

Node Number

0

Delete Node

Element Number

0

Delete Element

RUN

Optimization Objective Function (W x u)

0

W (kg)

0

U (m)

0

Element Optimization

Optimize Node

0

Wrt

0

Increment

0.02

MergeNodeOptimization

OPTIMIZE ALL

RESET

Bridge Configuration

Show Ref

Off

On

Mag

1 10 19 28 37 46 55 64 73 82 91 100

ColorBar

Gray

Parula

Jet

Hot

Summer

Cool

Save Figures

Displacement Figure

Show Ref

Off

On

U_y

DESIGNING OPTIMAL TRUSS-STRUCTURED BRIDGE

Node

X Coordinate

0

Element

Node1

0

NodeLabel

On

Off

Y Coordinate

0

Node2

0

ElementLabel

On

Off

GenerateNode

GenerateElement

NumberofNodes

15

NumberofElements

36

ReadNL&EL

RemoveAll

Show NL&EL Table

Options

Tables

Options

Initialize BC

Off

On

Size

1 10 19 28 37 46 55 64 73 82 91 100

Node Number

0

Delete Node

Element Number

0

Delete Element

RUN

Optimization Objective Function (W x u)

1.625

W (kg)

60.41

U (m)

-0.026

Element Optimization

Optimize Node

0

Wrt

0

Increment

0.02

MergeNodeOptimization

OPTIMIZE ALL

RESET

Bridge Configuration

Show Ref

Off

On

Mag

1 10 19 28 37 46 55 64 73 82 91 100

ColorBar

Gray

Parula

Jet

Hot

Summer

Cool

Save Figures

Stress Figure

Show Ref

Off

On

U_y

Displacement Figure

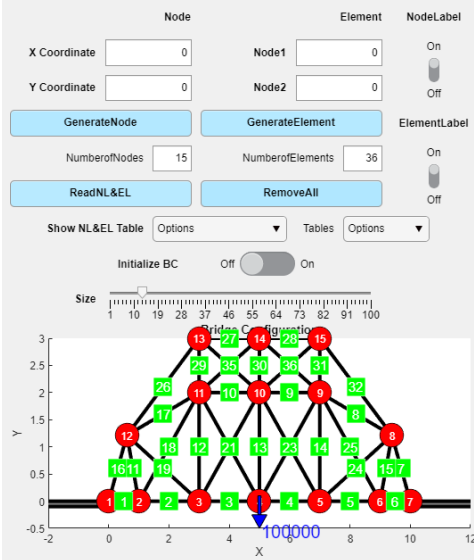
Show Ref

Off

On

U_y

DESIGNING OPTIMAL TRUSS-STRUCTURED BRIDGE



Node Number: Delete Node

Element Number: Delete Element

Done!

RUN

Optimization Objective Function (W x u)

W (kg): U (m):

Element Optimization

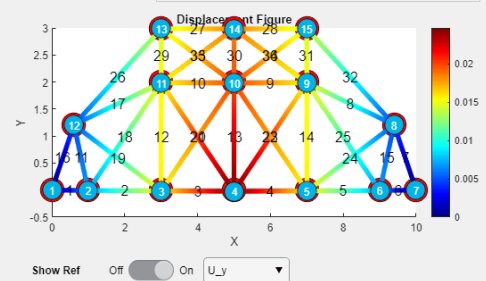
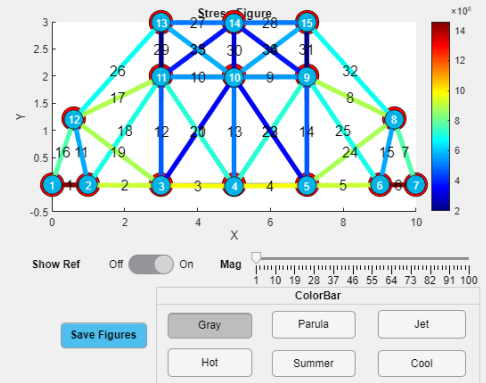
Optimize Node: Wrt:

Increment:

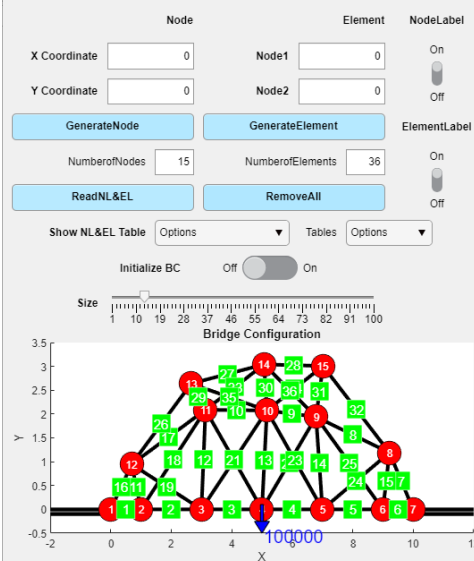
MergeNodeOptimization

OPTIMIZE ALL

RESET



DESIGNING OPTIMAL TRUSS-STRUCTURED BRIDGE



Node Number: Delete Node

Element Number: Delete Element

Iteration Count = 15

RUN

Optimization Objective Function (W x u)

W (kg): U (m):

Element Optimization

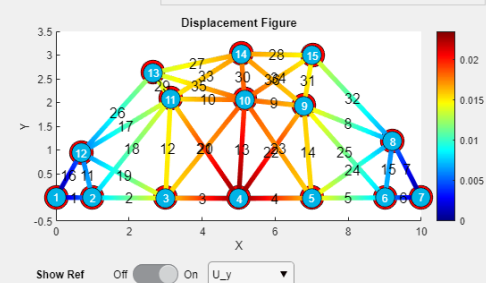
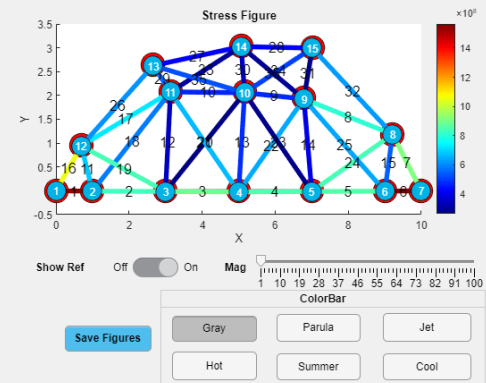
Optimize Node: Wrt:

Increment:

MergeNodeOptimization

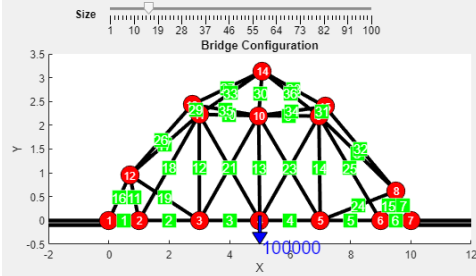
OPTIMIZE ALL

RESET



DESIGNING OPTIMAL TRUSS-STRUCTURED BRIDGE

Node	Element	NodeLabel
X Coordinate: <input type="text" value="0"/>	Node1: <input type="text" value="0"/>	On
Y Coordinate: <input type="text" value="0"/>	Node2: <input type="text" value="0"/>	Off
<input type="button" value="GenerateNode"/>	<input type="button" value="GenerateElement"/>	ElementLabel
NumberofNodes: <input type="text" value="15"/>	NumberofElements: <input type="text" value="36"/>	On
<input type="button" value="ReadNL&EL"/>	<input type="button" value="RemoveAll"/>	Off
Show NL&EL Table: <input type="button" value="Options"/>	Tables: <input type="button" value="Options"/>	
Initialize BC: <input type="button" value="Off"/>	<input type="button" value="On"/>	



Node Number:

Element Number:



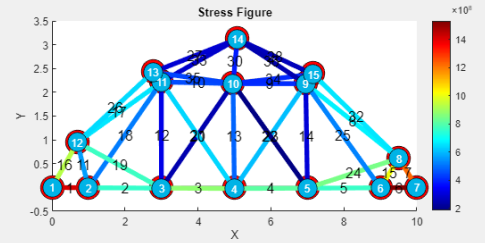
Done!

Optimization Objective Function (W x u)

W (kg): U (m):

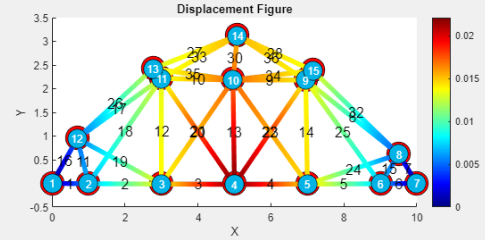
Optimize Node: Wrt:

Increment:



Show Ref: Mag:

ColorBar



Show Ref: U_y: