



# Favorite Inductive Construction

Herman Servatius



Home Page

Title Page



Page 1 of 10

Go Back

Full Screen

Close

Quit



Home Page

Title Page



Page 2 of 10

Go Back

Full Screen

Close

Quit

## The 2-sum

$$M_1 \bigoplus_2 M_2$$

$$M_1 \cap M_2 = \{e\}$$

Circuits:

Circuits of  $M_1 - \{e\}$

Circuits of  $M_2 - \{e\}$

$$(C_1 - e) \cup (C_2 - \{e\})$$



Home Page

Title Page



Page 3 of 10

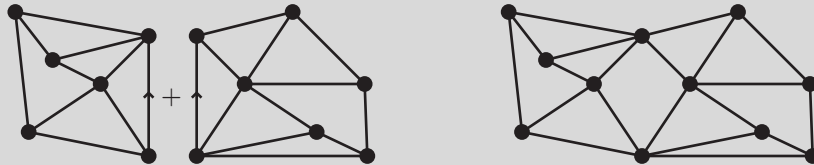
Go Back

Full Screen

Close

Quit

The 2-sum of two frameworks



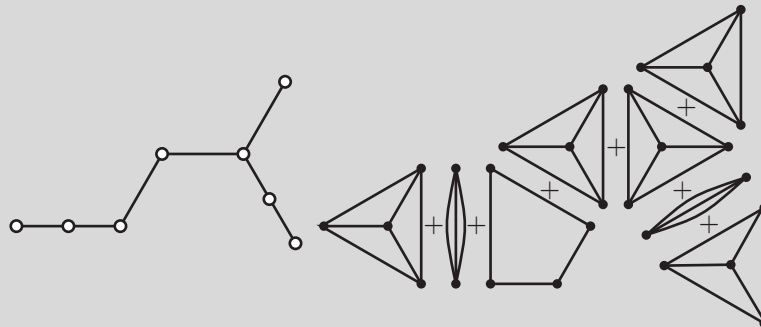
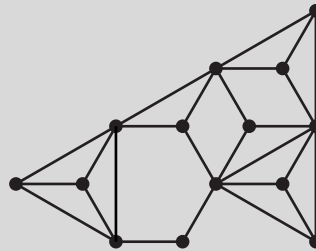
The 2-sum of two circuits.

Note that the 2-sum of two cycles is a cycle.



# 2-connected but not 3-connected graphs

## The 3-block tree



Home Page

Title Page



Page 4 of 10

Go Back

Full Screen

Close

Quit



Home Page

Title Page



Page 5 of 10

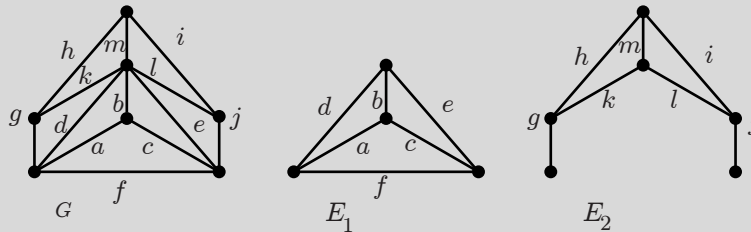
Go Back

Full Screen

Close

Quit

## The 3-blocks of a rigidity matroid may not be rigidity matroids



The rigidity matroid is not closed under 2-sum decomposition.



Home Page

Title Page



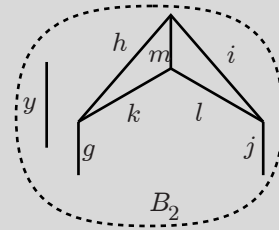
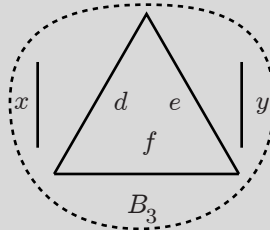
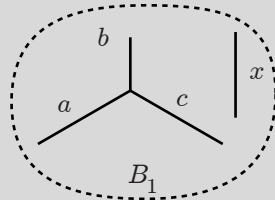
Page 6 of 10

Go Back

Full Screen

Close

Quit





[Home Page](#)

[Title Page](#)



Page 7 of 10

[Go Back](#)

[Full Screen](#)

[Close](#)

[Quit](#)

# Universal rigidity and framework connectivity

$G = (V, E; \mathbf{p})$  universally rigid,  
2-connected but not 3-connected.

At most one of the the lobes lie along the affine span of the two separator.



# An *l-Form* universally rigid graph

Home Page

Title Page



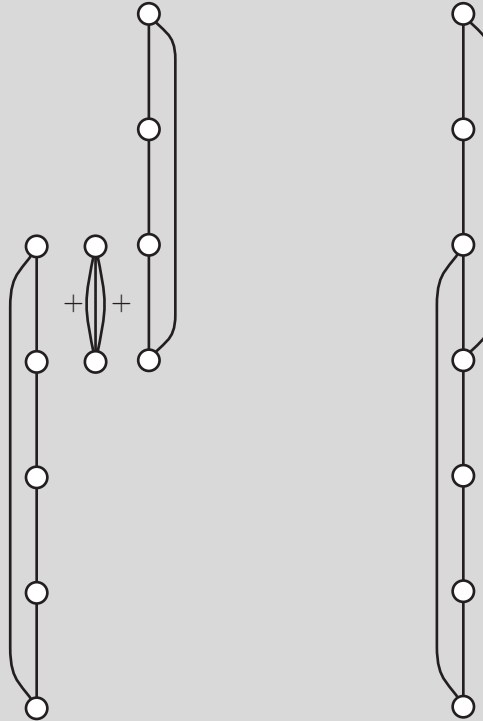
Page 8 of 10

Go Back

Full Screen

Close

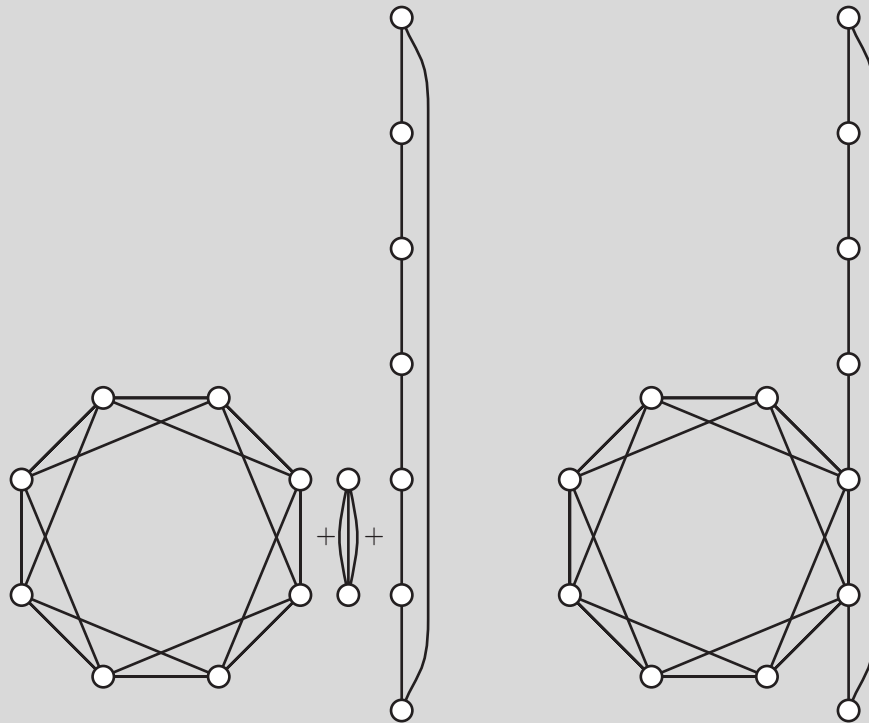
Quit







# A *b-Form* universally rigid graph



Home Page

Title Page



Page 9 of 10

Go Back

Full Screen

Close

Quit



Home Page

Title Page



Page 10 of 10

Go Back

Full Screen

Close

Quit

