

1.224 Recitation #5

Transit crew scheduling

Agenda

- HASTUS
- Set partitioning
- Column generation
- Athena @\$@\$

HASTUS

- Decomposition
 - HASTUS-BUS
 - HASTUS-MACRO
 - HASTUS-MICRO

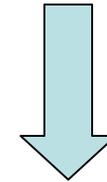
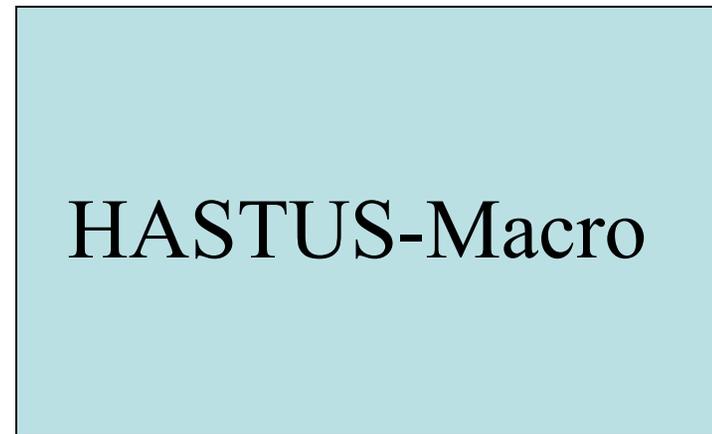
HASTUS-Macro

Input : blocks

Relaxations:

Fractional drivers,
30 minute partitioning

Neglect travel time (to and from
relief points)



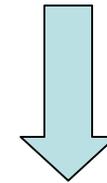
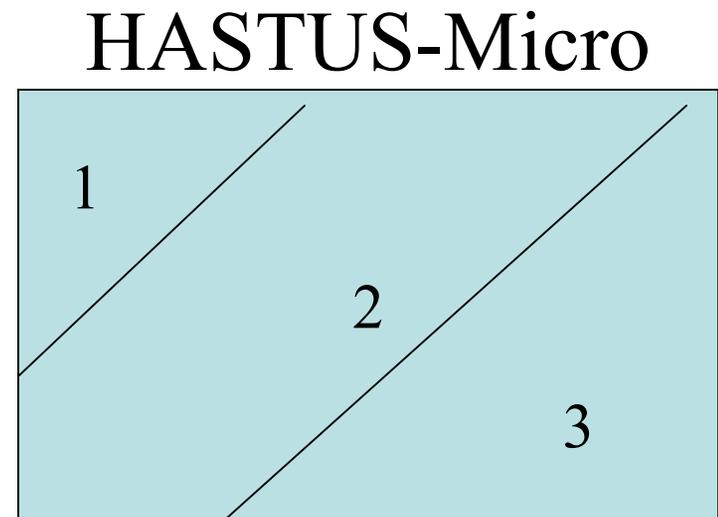
List of pieces that provide
Cheap way of covering blocks

HASTUS-Micro

Input: output from
HASTUS-Macro

3 steps:

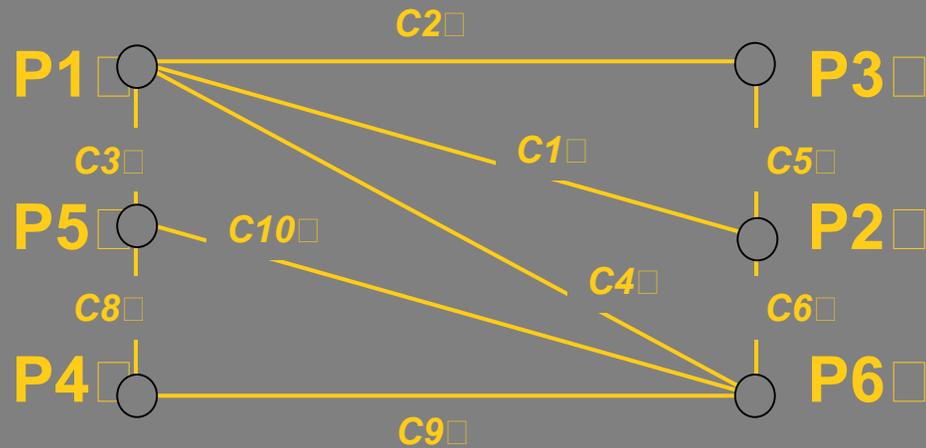
- 1) Partition vehicle blocks close to macro solution
- 2) **Hook the pieces together (as seen in class)**
- 3) Marginal improvement phase



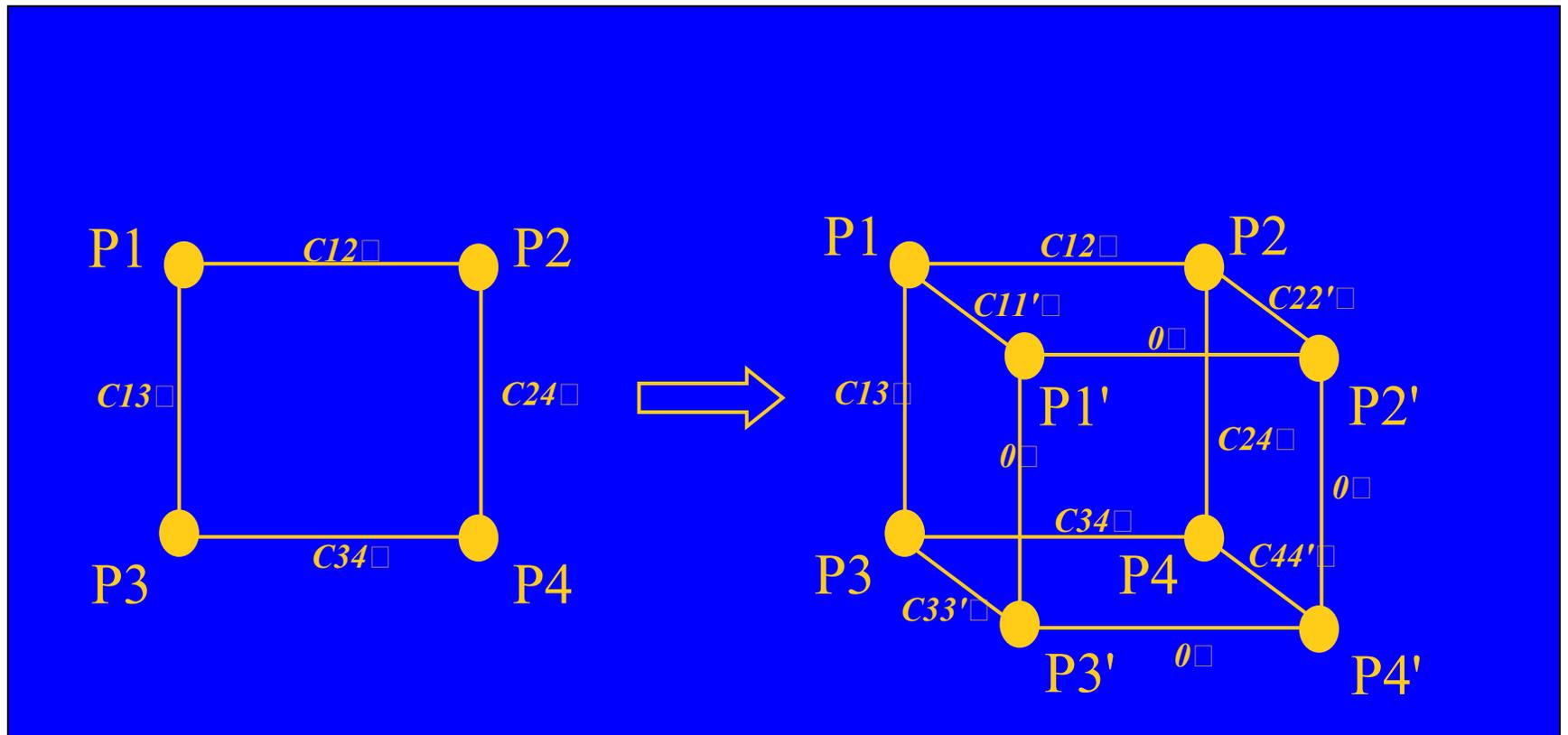
Good workable crew schedule

Micro, step 2

Pieces are nodes...



Adding tripper runs



Compare HASTUS to HW

Where does **column generation** fit in?
What is **column generation**???

ATHENA @#@#%*

- Source .path file
- Cutting and pasting into emacs
- Use loqo if it takes too long
- IF and AND finally get to be used in EXCEL!