

Some Observation on

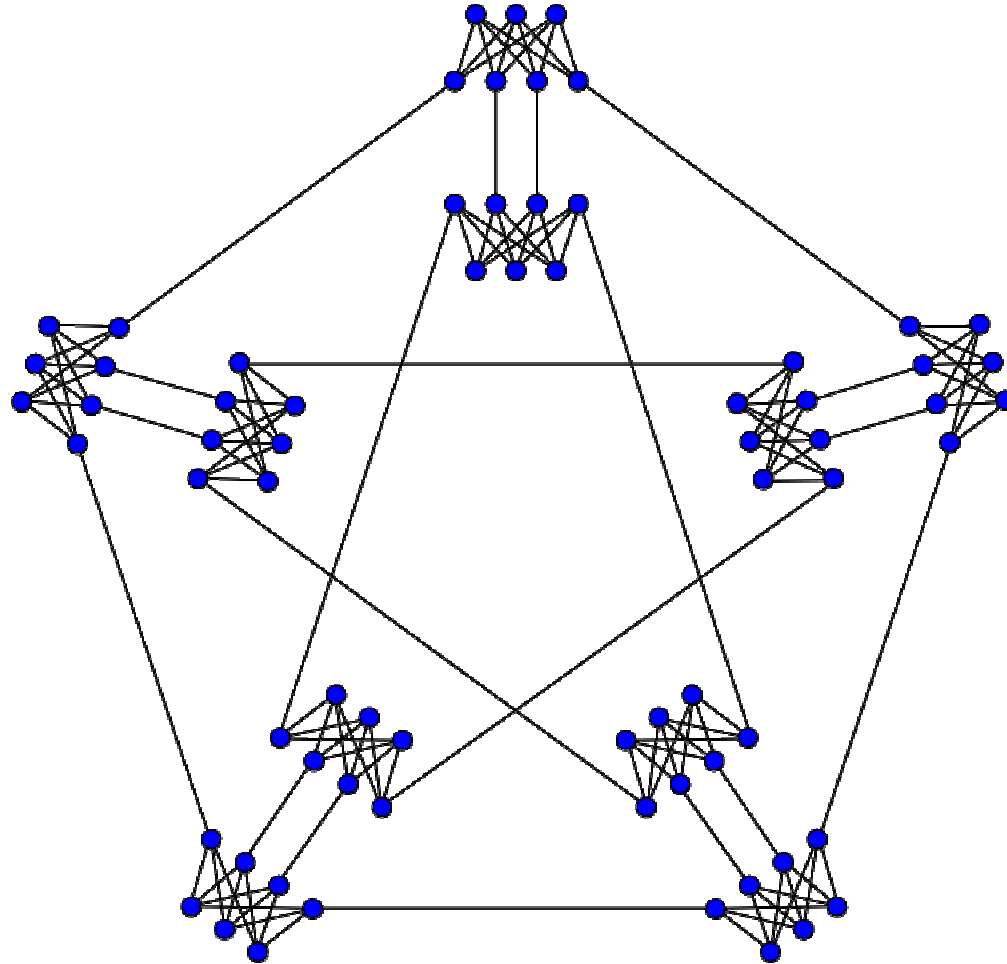
Nash Williams Conjecture and the
Dominating Cycle Conjecture

Arthur Hoffmann-Ostenhof

Dominating Cycle Conjecture:

Every cyclically 4-edge connected cubic graph has a dominating cycle.

Nash Williams Conjecture: Every 4-regular 4-connected graph is hamiltonian.



Counterexample (Meredith Graph)

What is the connection between the DCC and the NWC ?

Definitions

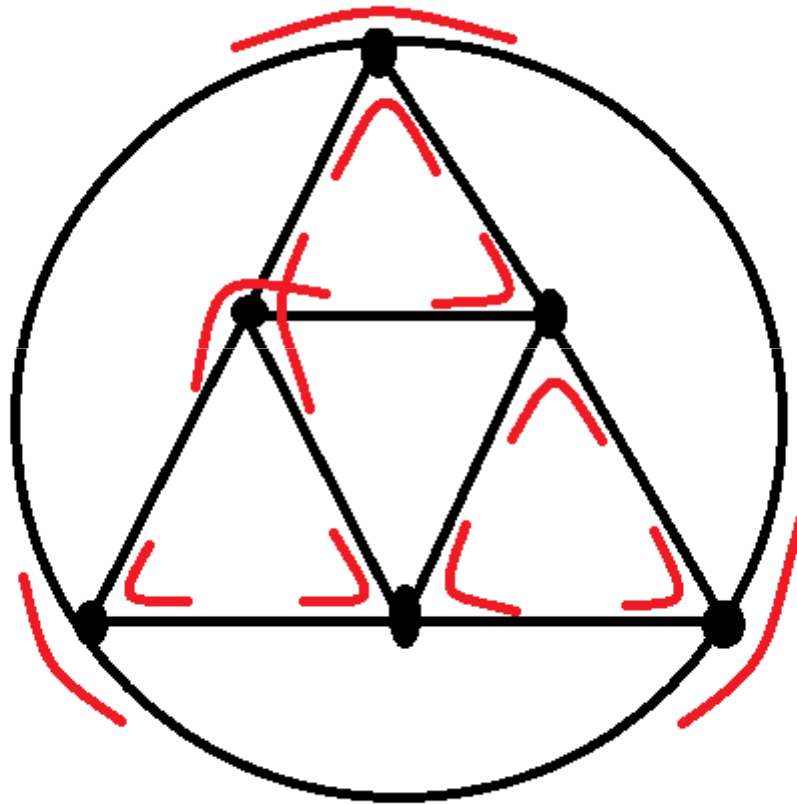
Let H be a 4-regular graph.

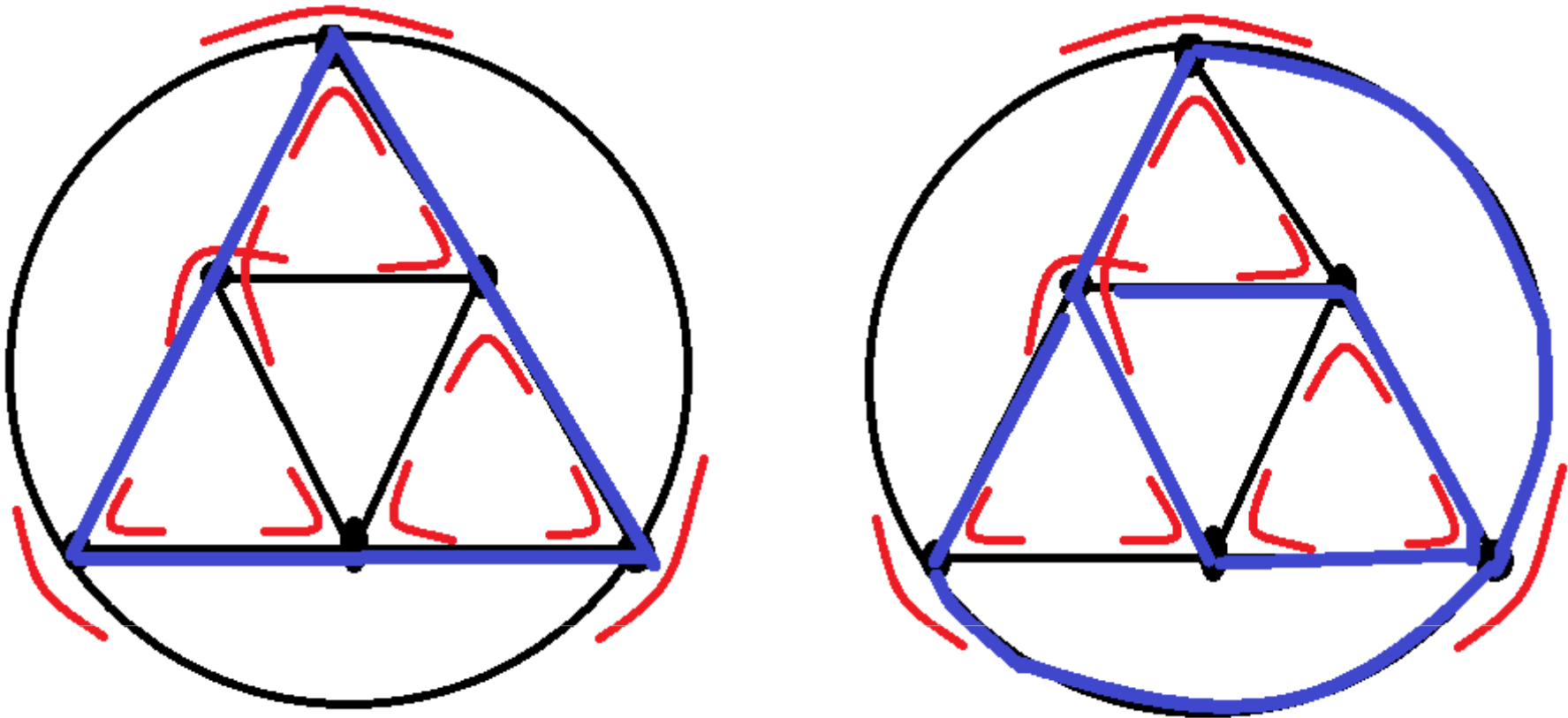
Let P_v be a partition of the edges incident with $v \in V(H)$ into two sets (*transitions*) of size 2.

$X := \{ P_v : v \in V(H) \}$ is called a *transition system* of H .

A closed **X-trail** of H is a closed spanning trail **C** of H which follows the transitions of **X** in every 4-valent vertex of **C**.

Example





Modified Nash Williams Conjecture (NWC*):

Let H be a 4-regular 4-connected graph with a transition system X , then H has a closed X -trail

Theorem (AHO): DCC and NWC^* are equivalent.

Thanks for your attention