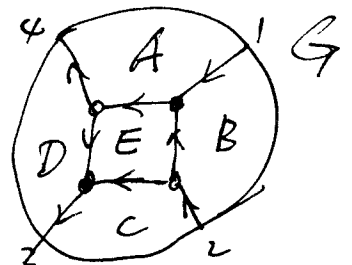


Theorem (W): The poset of cells of $(G/p)_{\geq 0}$ - in particular $(Gr_{kn})_{\geq 0}$ - is the poset of cells of a regular CW-complex homeomorphic to a ball.

Def: A platonic graph is a planar bicolored graph embedded in internal a disk.

- Vertices are black or white
- Boundary vertices have deg 0 or 1



Def: A perfect orientation \mathcal{O} of a platonic graph is an orientation of the edge s.t.

- each black vertex has exactly one outgoing edge.
- + --- white --- ingoing edge.

Parametrization of cell

- Label faces of G with variables s.t. $ABCDE = 1$
- For each pair (i, j) consider all directed paths $i \rightarrow j$

$$\begin{array}{cc} & \begin{matrix} 1 & 2 & 3 & 4 \end{matrix} \\ \begin{matrix} 1 \\ 2 \end{matrix} & \begin{pmatrix} 1 & 0 & BCE & BCDE \\ 0 & 1 & C+CE & CDE \end{pmatrix} \end{array} \longmapsto (1, C+CE, CDE, BCE, BCDE, BC^2DE^2)$$

This gives a parametrization of the cell is map

$$(\mathbb{R}_{>0})^4 \longrightarrow (Gr_{44})_{\geq 0}$$

Construction: Fix a platonic graph cell a perfect orientation \mathcal{O} .

Define a cone E_0 as follows:

For each directed path in \mathcal{O} we associate a half space.

In previous example:

$$\begin{aligned} C \geq 0, C+E \geq 0 \\ C+d+l \geq 0, b+c+e \geq 0 \end{aligned}$$