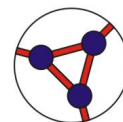
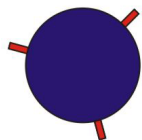
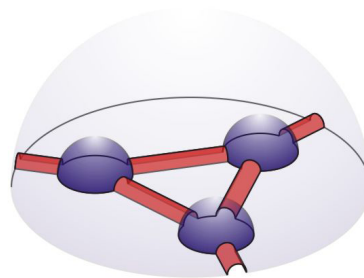
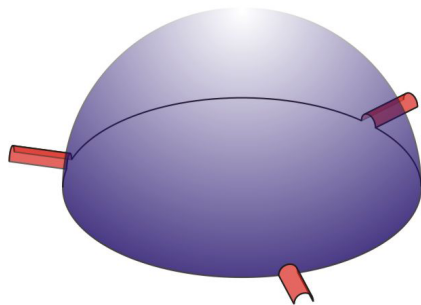
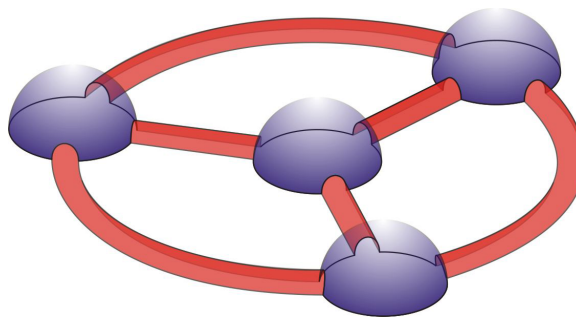
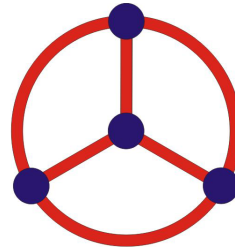
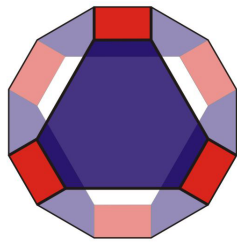


LECTURE NOTES VOLUME CONJECTURE FOR AUGMENTED KNOTTED TRIVALENT GRAPHS

ROLAND VAN DER VEEN



Date: January 15, 2010.

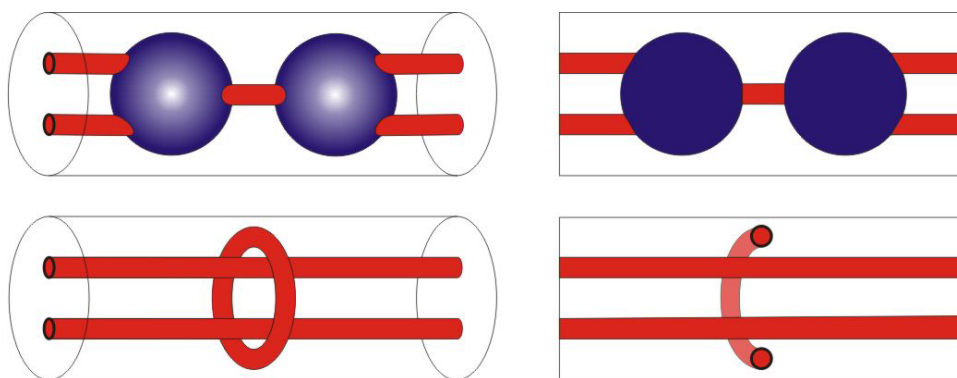


Figure 1. The geometric side

$$\begin{array}{c}
 \begin{array}{ccc}
 \begin{array}{c} \text{C} \\ \diagup \quad \diagdown \\ \text{d} \quad \text{b} \\ \diagdown \quad \diagup \\ \text{B} \quad \text{D} \end{array} & = & \langle \begin{array}{c} \text{B C D} \\ \text{b c d} \end{array} \rangle \\
 \end{array} \\
 \begin{array}{ccc}
 \begin{array}{c} \text{C} \\ \diagup \quad \diagdown \\ \text{d} \quad \text{b} \\ \diagdown \quad \diagup \\ \text{B} \quad \text{D} \end{array} & = & \sum_c \frac{\langle \text{c} \rangle}{\langle \text{b c d} \rangle} \begin{array}{c} \text{b} \quad \text{d} \\ \diagdown \quad \diagup \\ \text{c} \\ \diagup \quad \diagdown \\ \text{b} \quad \text{d} \end{array} \\
 \end{array} \\
 \begin{array}{ccc}
 \begin{array}{c} \text{C} \\ \diagup \quad \diagdown \\ \text{d} \quad \text{b} \\ \diagdown \quad \diagup \\ \text{B} \quad \text{D} \end{array} & = & \frac{\langle \text{B C D} \rangle}{\langle \text{B C D} \rangle} \begin{array}{c} \text{C} \\ \diagup \quad \diagdown \\ \text{B} \quad \text{D} \end{array} \\
 \end{array} \\
 \begin{array}{ccc}
 \begin{array}{c} \text{C} \\ \diagup \quad \diagdown \\ \text{d} \quad \text{b} \\ \diagdown \quad \diagup \\ \text{B} \quad \text{D} \end{array} & = & (-1)^{\frac{n-1}{2}} A^{\frac{n^2-1}{2}} \begin{array}{c} \text{C} \\ \diagup \quad \diagdown \\ \text{B} \quad \text{D} \end{array} \\
 \end{array} \\
 \begin{array}{ccc}
 \begin{array}{c} \text{N} \\ \diagup \quad \diagdown \\ \text{C} \\ \diagdown \quad \diagup \\ \text{B} \quad \text{D} \end{array} & = & (-1)^{N-1} \frac{[N k]}{[k]} \begin{array}{c} \text{C} \\ \diagup \quad \diagdown \\ \text{B} \quad \text{D} \end{array}
 \end{array}
 \end{array}$$

Figure 2. The algebraic side