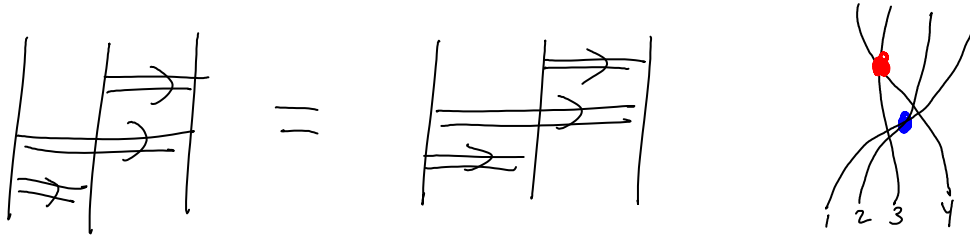


R3, degree by degree

December-15-09
1:37 PM



$$R = 1 + r + \dots + R_{n-1} + R_n$$

R_n does not influence E_n ; yet

$$\delta E_n = [R_{n-1}^{12}, r^{13} + r^{23}] + [R_{n-1}^{13}, r^{23} - r^{12}] + [R_{n-1}^{23}, -r^{12} - r^{13}]$$

The syzygy:

1
2
3
4

The group B_4 :

Generators: $\sigma_1 \rightarrow \begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array}$ $\sigma_2 \rightarrow \begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array}$ $\sigma_3 \rightarrow \begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array}$

Relations: $\sigma_1\sigma_3 = \sigma_3\sigma_1$: $\begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array} \rightarrow \begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array} = \begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array}$

$\sigma_1\sigma_2\sigma_1 = \sigma_2\sigma_1\sigma_2$: $\begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array} \rightarrow \begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array} = \begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array}$

$\sigma_2\sigma_3\sigma_2 = \sigma_3\sigma_2\sigma_3$: $\begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array} \rightarrow \begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array} = \begin{array}{c} \text{---} \\ \times \\ \text{---} \end{array}$

$\sigma_1\sigma_2\sigma_1\sigma_3\sigma_2\sigma_1$

$\sigma_1\sigma_2\sigma_3\sigma_1\sigma_2\sigma_1$

$\sigma_1\sigma_2\sigma_3\sigma_2\sigma_1\sigma_2$

$\sigma_2\sigma_1\sigma_2\sigma_3\sigma_2\sigma_1$

$\sigma_2\sigma_1\sigma_3\sigma_2\sigma_3\sigma_1$

$\sigma_2\sigma_3\sigma_2\sigma_1\sigma_2\sigma_3\sigma_1$

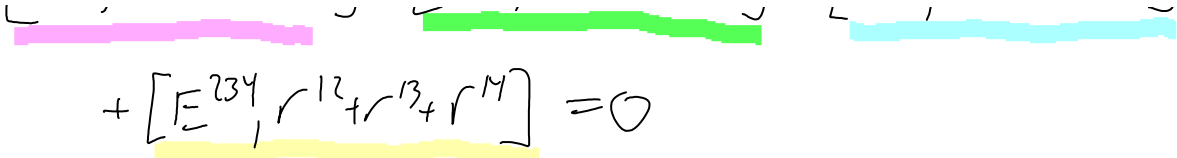
$\sigma_2\sigma_3\sigma_1\sigma_2\sigma_3\sigma_1$

$\sigma_2\sigma_3\sigma_1\sigma_2\sigma_1\sigma_3$

$\sigma_2\sigma_3\sigma_2\sigma_1\sigma_2\sigma_3$

A Syzygy:

$$[E^{123}, r^{14} + r^{24} + r^{34}] + [E^{124}, r^{34} - r^{13} - r^{12}] + [E^{134}, r^{12} - r^{23} - r^{24}]$$



The image shows a handwritten mathematical expression. At the top, there are three horizontal bars: a pink one on the left, a green one in the middle, and a cyan one on the right. Below these, the expression is $+ [E^{234}, r^{12} + r^{13} + r^{14}] = 0$. The entire expression is underlined in yellow.

(There ought to be a term quadratic in r , as well). [Probably not...]

Continued at <http://katlas.math.toronto.edu/drorbn/bbs/show?shot=LeeP-100708-104005.jpg> (by Peter Lee, in July 2010) - this seems related to the Gerstenhaber bracket!

Also related to <http://katlas.math.toronto.edu/drorbn/bbs/show?shot=LazyKnots-100203-165847.jpg> (for a possible B version).