

# A \$100 Problem on the Gassner Representation

<http://drorbn.net/AcademicPensieve/2014-06/>  
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Let  $uB_n := \langle \sigma_i : 1 \leq i < n \rangle / (\sigma_i \sigma_j = \sigma_j \sigma_i \text{ when } |i - j| > 1 \text{ and } \sigma_i \sigma_{i+1} \sigma_i = \sigma_i \sigma_{i+1} \sigma_i \text{ when } i < n)$  be the usual braid group on  $n$  strands. Let  $R = R_n = \mathbb{Z}[T_i, T_i^{-1} : 1 \leq i \leq n]$  be the ring of Laurent polynomials in  $n$  variables  $T_1, \dots, T_n$ .