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**Romyar T Sharifi\*** ([sharifi@math.arizona.edu](mailto:sharifi@math.arizona.edu)), Department of Mathematics, University of Arizona, P.O. Box 210089, Tucson, AZ 85721. *A relationship between two conjectures of the structure of Galois groups of number fields.* Preliminary report.

Consider the canonical representation of the absolute Galois group of  $\mathbf{Q}$  in the outer automorphism group of the pro- $p$  completion of the fundamental group of  $\mathbf{P}^1 - \{0, 1, \infty\}$ . Deligne has conjectured that a certain graded  $\mathbf{Z}_p$ -Lie algebra arising from this representation is free on elements in odd degree  $\geq 3$  when considered as a  $\mathbf{Q}_p$ -Lie algebra. We construct good choices of these elements. We will examine what this says about generation of the  $\mathbf{Z}_p$ -Lie algebra. Through comparison with an Iwasawa-theoretic conjecture of Greenberg's, we will see that the answer depends upon the regularity of the prime  $p$ . (Received October 03, 2000)