Jeremy Miller, Peter Patzt* (ppatzt@purdue.edu) and Andrew Putman. Top dimensional cohomology of principal congruence subgroups.

The level p congruence subgroup of $SL_n(\mathbb{Z})$ is defined to be the subgroup of matrices congruent to the identity matrix mod p. These groups have trivial cohomology in high enough degrees. In the 1970s, Lee and Szczarba gave a conjectural description of the top cohomology groups of these congruence subgroups. In joint work in progress with Jeremy Miller and Andrew Putman, we show that this conjecture is false and that these congruence subgroups have extra exotic cohomology classes in their top degree cohomology coming from the first homology group of the associated modular curve. (Received July 10, 2019)