3/26/10

Description of congruence subgps of S_n, i.e. units congruent to 1 mod S^k.

- Each subgp is normal in the next
- Each subquotient is $(\mathbb{Z}/p)^3$
- For $k > 0$, $H^* = \Lambda(n^2 \text{ gens})$.

- For $k >> 0$ the group is cohomologically abelian.

My remarks

Consider the SES

$$0 \to N^0 \to M^0 \to N^1 \to 0$$

$$N^0 = BP_*, \quad M^0 = p^{-1}BP_*, \quad N^1 = BP_*/p^\infty$$

The element $v_1^i/p^i \in N^1$ is invariant since

$\eta_R(v_1) = v_1 + pt_1$ so $\eta_R(v_1^i) \equiv v_1^i \mod p^i$

There is a conn hom $\mathrm{Ext}^0(N^1) \to \mathrm{Ext}^1(N^0)$.

The images of $\frac{v_1^i}{p^i}$ is called $\bar{\alpha}_i$ and

represents a gen of $\mathrm{Im}\, J$.