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Ted CHINBURG. Group homology and exterior quotients in Iwasawa theory.

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Abstract: Higher codimension Iwasawa theory concerns the support in codimension greater than one of Iwasawa modules. A useful technique when relating this support to p-adic L-functions is to consider the quotient of the top exterior power of an Iwasawa module M of rank r by the sum of the r-th exterior powers of submodules arising from various Panciskin conditions. A natural question is then to give a Galois theoretic interpretation of such exterior quotients.

In this talk I will discuss such an interpretation for r >= 2 involving group homology. The particular homology group involved is H_{r-2}(A,T) when A and T are the first and second graded quotients in the derived series of a pro-p Galois group. One consequence is that the Galois theoretic information provided by second Chern classes in the case of Iwasawa theory over CM fields seems to governed by the first two graded quotients of the derived series, rather than being about higher graded quotients. This is joint work with F. Bleher, R. Greenberg, M. Kakde, R. Sharifi and M. J. Taylor.