Proposed talk title and abstract of Ján Mináč for the conference:

ARITHMETIC GALOIS THEORY AND RELATED MODULI SPACES

"Galois Cohomology, Quotients of Absolute Galois Groups, and A Little Modular Representation Theory"

ABSTRACT. Absolute Galois groups of fields are mysterious. One can try to find manageable but still non-trivial quotients of absolute Galois groups. Let p be a prime number. In joint work with D. Benson, N. Lemire, and J. Swallow we consider groups $T(E/F) = G_F/\Phi(G_E)$, where F is a field containing a primitive pth root of unity such that its absolute Galois group G_F is a pro-p group, E/F is a cyclic extension of degree p and $\Phi(G_E)$ is the Frattini subgroup of G_E. We determine all possible groups $T(E/F)$. Further assuming the Bloch-Kato conjecture we determine the $\mathbb{F}_p[G_F/G_E]$-module $H^i(G_E, \mathbb{F}_p)$ for all $i = 1, 2, \ldots$ which extends the previous work of Borevič and Faddeev on the $\mathbb{F}_p[G_F/G_E]$ structure $H^1(G_E, \mathbb{F}_p)$ in the case of local fields.