**Speaker:** Karol Koziol

**Title:** Poincare duality for modular representations of $p$-adic groups and Hecke algebras

**Abstract:** The mod-$p$ representations theory of $p$-adic reductive groups (such as $GL_2(Q_p)$) is one of the foundations of the rapidly developing mod-$p$ local Langlands program. However, many constructions from the case of complex coefficients are quite poorly behaved in the mod-$p$ setting, and it becomes necessary to use derived functors. In this talk, I’ll describe how this situation looks for the functor of smooth duality on mod-$p$ representations, and discuss the construction of a Poincare duality spectral sequence relating Kohlhaase’s functors of higher smooth duals with modules over the (pro-$p$) Iwahori-Hecke algebra.