A conference in honor of Arthur Ogus on the occasion of his 70th birthday

Jeudi 24 septembre 2015, 16h-17h

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Titre: On the cohomology of the punctured spectrum in the mixed characteristic case

Résumé: Let $R$ be an $n$-dimensional excellent henselian local domain of mixed characteristic $(0, p)$ with residue field $k$ of $p$-rank $r$. Let $X$ be the punctured spectrum of $R$ and $j$ the inclusion of $X - V(p)$ in $X$. Using work with Orgogozo I show that the $p$-cohomological dimension of $X$ is $\dim_p(k) + 2n - 1$ and study the top cohomologies. In particular I construct isomorphisms for normal $R$

$$H^{2n+r}(X, j_! \mathbb{Z}/p^s(n + r)) \sim H^1(k, W_2 \Omega^r_{\log})$$

which generalize a result of Kato in dimension 1. I also discuss facts about prime to $p$ cohomology and multiplicities associated to certain local ring maps.