DAVID MIYAMOTO, University of Toronto
Basic forms on foliated manifolds

Given a foliated manifold $(M, \mathcal{F})$, a differential form α on M is called *basic* if $\iota_v \alpha = 0$ and $\iota_v d\alpha = 0$ for all tangent vectors v along the foliation. This gives the de Rham complex of basic forms $\Omega^\bullet_{\mathcal{F}}(M)$. Equipping the leaf space $M/\mathcal{F}$ with the quotient diffeology, we may also consider the de Rham complex $\Omega^\bullet(M/\mathcal{F})$ of diffeological differential forms. Using the fact the pseudogroup of diffeomorphisms associated to the (unique up to Morita equivalence) étale holonomy groupoid is countably generated, we prove that the quotient map $\pi : M \to M/\mathcal{F}$ induces an isomorphism $\pi^* : \Omega^\bullet(M/\mathcal{F}) \to \Omega^\bullet_{\mathcal{F}}(M)$. First we pass from the notion of basic forms with respect to a foliation, to basic forms on the object manifold of a Lie groupoid. We then use the fact this notion of basic is invariant under Morita equivalence of Lie groupoids to pass to the étale holonomy groupoid and its associated pseudogroup.