

1106-51-1790      **Jordan Watts\*** ([jawatts@illinois.edu](mailto:jawatts@illinois.edu)), Department of Mathematics, 1409 W Green Street,  
Urbana, IL 61801. *Calculus on a Symplectic Reduced Space.*

Given a Hamiltonian group action on a symplectic manifold, one can apply symplectic reduction in order to reduce the number of degrees of freedom. However, the result may not be a manifold; in general, it is a symplectic stratified space, and on this space one typically wants to perform differential topology.

We will review a de Rham complex defined by Sjamaar which yields the major theorems of Stokes and de Rham. However, this definition is not intrinsic, and this causes issues when, say, attempting reduction in stages. Is Sjamaar's complex isomorphic to a complex intrinsic to the stratified space?

We then turn our attention to diffeological spaces, and show that in the case of Poisson reduction we obtain a de Rham complex on the orbit space which matches basic forms on the original manifold. We then return to the question above and give a partial affirmative result, and time-permitting we will discuss issues in obtaining the full result.

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