1021-57-35 **Vladimir V Chernov*** (`Vladimir.Chernov@dartmouth.edu`), Mathematics Department, 6188 Bradley Hall, Dartmouth College, Hanover, NH. *Poisson and other algebras on bordism groups of garlands.*

Fix an oriented manifold M and a set $\mathfrak{N}$ consisting of closed oriented manifolds. Roughly speaking, the space $G_{\mathfrak{N},M}$ of $\mathfrak{N}$-garlands in M is the space of mappings into M of singular manifolds obtained by gluing manifolds from $\mathfrak{N}$ at some marked points.

We introduce operations $\star$ and $[\cdot,\cdot]$ on the tensor product of $\mathbb{Q}$ and a certain bordism group $\widehat{\Omega}_*(G_{\mathfrak{N},M})$. For $\mathfrak{N}$ consisting of odd-dimensional manifolds, these operations make $\widehat{\Omega}_*(G_{\mathfrak{N},M})\otimes\mathbb{Q}$ into a graded Poisson algebra. For $\mathfrak{N}$ consisting of even-dimensional manifolds, $\star$ satisfies a graded Leibniz rule with respect to $[\cdot,\cdot]$, but $[\cdot,\cdot]$ does not satisfy a graded Jacobi identity. Some modifications of our algebra are sensitive to the differentiable structure on M. The *mod* 2-analogue of $[\cdot,\cdot]$ for one-element sets $\mathfrak{N}$ and many other operations were previously constructed in our preprint with Rudyak.

For $\mathfrak{N}=\{S^1\}$ and 2-dimensional M our algebra is related to the Goldman-Turaev and Andersen-Mattes-Reshetikhin algebras. (Received August 12, 2006)