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	authors	<ul style="list-style-type: none"><li>Johannes Huebschmann</li></ul>	authors	<ul style="list-style-type: none"><li>Johannes Huebschmann</li></ul>	NOT DUPLICATES	1247
	title	The singularities of Yang-Mills connections for bundles on a surface. II. The stratification	title	The singularities of Yang-Mills connections for bundles on a surface. I. The local model		
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	id	id-8509844314071546528	id	id5429839854645576288		
	abstract	Let $\Sigma$ be a closed surface, $G$ a compact Lie group, not necessarily connected, with Lie algebra $\mathfrak{g}$ , endowed with an adjoint action invariant scalar product, let $P \rightarrow \Sigma$ be a principal $G$ -bundle, and pick a Riemannian metric and orientation on $\Sigma$ so that the corresponding Yang-Mills equations are defined. In an earlier paper we determined the local structure of the moduli space $\mathcal{N}(\xi)$ of central Yang-Mills connections on $\xi$ near an arbitrary point. Here we show that the decomposition of $\mathcal{N}(\xi)$ into connected components of orbit types of central Yang-Mills connections is a stratification in the strong (i.e. Whitney) sense; furthermore each stratum, being a smooth manifold, inherits a finite volume symplectic structure from the given data. This complements, in a way, results of {\smc Atiyah-Bott} in that it will in general decompose further the critical sets of the corresponding Yang-Mills functional into smooth pieces.	abstract	Let $\Sigma$ be a closed surface, $G$ a compact Lie group, not necessarily connected, with Lie algebra $\mathfrak{g}$ , endowed with an adjoint action invariant scalar product, let $P \rightarrow \Sigma$ be a principal $G$ -bundle, and pick a Riemannian metric and orientation on $\Sigma$ , so that the corresponding Yang-Mills equations $d_A * K_A = 0$ are defined, where $K_A$ refers to the curvature of a connection $A$ . For every central Yang-Mills connection $A$ , the data induce a structure of unitary representation of the stabilizer $Z_A$ on the first cohomology group $H^1_A(\Sigma, \mathfrak{ad}(\xi))$ with coefficients in the adjoint bundle $\mathfrak{ad}(\xi)$ , with reference to $A$ , with momentum mapping $\Theta_A$ from $H^1_A(\Sigma, \mathfrak{ad}(\xi))$ to the dual $Z_A^*$ of the Lie algebra $\mathfrak{z}_A$ of $Z_A$ . We show that, for every central Yang-Mills connection $A$ , a suitable Kuranishi map identifies a neighborhood of zero in the Marsden-Weinstein reduced space $H_A$ for $\Theta_A$ with a neighborhood of the point $[A]$ in the moduli space of central Yang-Mills connections on $\xi$ .		
	versions		versions			