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Closed forms on symplectic fibre bundles.

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A bundle of symplectic manifolds is a differentiable fibre bundle $\pi: E \rightarrow B$ with fibre F such that the local fibres of π are symplectic manifolds with structure induced by a symplectic structure of F . The problem treated in this paper is that of the existence of a closed form on E that restricts to the symplectic structure on every fibre of π . The main theorem proved is: “Let $F \rightarrow E \rightarrow B$ be a bundle of symplectic manifolds with 1-connected fibre and base. Unless $H^{2k}(F; \mathbf{R}) \neq 0$ for all $k \geq 0$, the symplectic structure along the fibres has a closed extension.”

Reviewed by *I. Vaisman*

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