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Let us consider a manifold with an affine connection (M, ∇) endowed locally with a binary operation at the point p given by the formula:

$$u \cdot v = \text{Exp}_u \circ \tau_{p,u} \circ \text{Exp}_p^{-1}(v),$$

where $\text{Exp}_p^{-1} : M \rightarrow T_p(M)$ is the exponential mapping, and $\tau_{p,u}$ is the parallel displacement of tangent vectors at p along the geodesic arc joining p to the point u .

A manifold M with such a binary operation at point p is called a geodesic loop. We would like to discuss the geometric properties of a geodesic loop $\langle M, \cdot, p \rangle$ with the identity $x(y^m \cdot y^n) = xy^{m+n}$, i.e., a right-power alternative geodesic loop. (Received January 13, 2004)