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Functoriality of Forms^k on smooth manifolds

Definition. Forms^k functor on Man^{op}

The differential *k*-forms functor

$$\text{Forms}^k : \text{Man}^{op} \rightarrow \text{Vec}_{\mathbb{R}}$$

sends

- a smooth manifold to the [space of all *k*-forms](#)

$$M \mapsto \text{Forms}^k(M)$$

- a smooth map between manifolds to the pullback

$$\begin{array}{ccc} M_1 & & \text{Forms}^k(M_1) \\ \downarrow f & \mapsto & \uparrow f^* \\ M_2 & & \text{Forms}^k(M_2) \end{array}$$



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is a functor

Current note has 0 direct children and 0 total descendants.

- [structures based on sets](#)
 - [manifolds](#)
 - [smooth \$\mathbb{R}\$ -manifold](#)
 - [Tangents on a smooth manifold](#)
 - [Differential forms on smooth manifolds](#)
 - [Functoriality of Forms^k on smooth manifolds](#)

And it has 7 siblings.

- [structures based on sets](#)
 - [manifolds](#)
 - [smooth \$\mathbb{R}\$ -manifold](#)
 - [Tangents on a smooth manifold](#)
 - [Differential forms on smooth manifolds](#)
 - [Differential 1-forms on smooth manifolds](#)
 - [Chain complex of differential forms on a smooth manifold](#)
 - [Exterior derivative operator on space of smooth differential forms](#)
 - [Functoriality of Forms^k on smooth manifolds](#)
 - [The integral map on space of differential forms](#)
 - [Three different relative chain complexes of differential forms](#)
 - [The sheaf of differential forms on open subsets of manifolds](#)