

## Universal maps of infinite-dimensional manifolds

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Let  $\mathbb{R}^\infty = \varinjlim \mathbb{R}^n$ ,  $Q^\infty = \varinjlim Q^n$ , where  $Q$  denotes the Hilbert cube. The author [1] constructed a universal map  $\varphi: \mathbb{R}^\infty \rightarrow Q^\infty$  and proved a characterization theorem for this map as well as its uniqueness up to homeomorphism. A simple construction of this map is found in [2]. Also, in [2] the local non-homogeneity of  $\varphi$  is established.

In the paper [3], a counterpart of the universal map  $\varphi$  is defined in the category of  $k_\omega$ -spaces of higher weights. The aim of the talk is to establish some properties of universal maps such as fibrewise stability, fibrewise open and closed embedding theorems, preservation by some functorial constructions in the category of compact  $k_\omega$ -spaces (cf. [4]). The obtained results belong to the fibrewise theory of  $\mathbb{R}^\infty$ -manifolds.

We also address to the corresponding questions in the metrizable case; the universal map of the pre-Hilbert space of finite sequences onto the convex hull of the standard Hilbert cube in the separable Hilbert space which corresponds to the universal map  $\varphi$  in this case is constructed in [5].

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