Qamil Haxhibeqiri, *University of Prishtina, Kosovo*

The product of shape fibrations

The notion of shape fibration for maps between metric compacta was introduced by S. Mardešić and T. B. Rushing in [4] and [5]. In [3] S. Mardešić has extented this notion to maps of arbitrary topological spaces. The author has estabilished some further properties of shape fibrations in the noncompact case (see e.g. [1], [2]).

The main result of this paper is the foollowing theorem: *If* $p : E \to B$*,* $p' : E' \to B'$ *are maps of arbitrary topological spaces* E, E' *to compact Hausdorff spaces* B, B'*, then* $p \times p' : E \times E' \to B \times B'$ *is a shape fibration if and only if* p *and* p' *are shape fibrations.* T. Watanabe in [6] has proved that the product of maps between compact Hausdorff spaces is a shape fibration if and only if each of these maps is a shape fibration. Thus, our result can be considered as a generalization of the above mentioned Watanabe's result.

In order to obtain our main result, we have also shown the following result about resolutions of product spaces: *Let* $\boldsymbol{q} = (q_\lambda) : E \to \boldsymbol{E} = (E_\lambda, q_{\lambda\lambda'}, \Lambda)$ *be a morphism of* ***pro-Top*** *and* $\boldsymbol{r} = (r_\mu) : B \to \boldsymbol{B} = (B_\mu, r_{\mu\mu'}, M)$ *a morphism of* ***pro-Cpt*** *such that* $\boldsymbol{E}$ *is an* ANR*-system and* $\boldsymbol{B}$ *a compact* ANR*-system. Then* $\boldsymbol{q} \times \boldsymbol{r} = (q_\lambda \times r_\mu) : E \times B \to \boldsymbol{E} \times \boldsymbol{B} = (E_\lambda \times B_\mu, q_{\lambda\lambda'} \times r_{\mu\mu'}, \Lambda \times M)$ *is a resolution of* $E \times B$ *if and only if* $\boldsymbol{q}$ *and* $\boldsymbol{r}$ *are resolutions of* E *and* B *respectively.*

References

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