

Podpuna ultrametrika na pro^* -morfizmima

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Za bilo koju kategoriju \mathcal{A} , svaki inverzni sustav \mathbf{X} u \mathcal{A} i svaki kofinitni inverzni sustav \mathbf{Y} u \mathcal{A} , na skupu $pro^*\mathcal{A}(\mathbf{X}, \mathbf{Y})$ postoji podpuna ultrametrika d^* . Otkriven je nuždan i dostatan uvjet da pripadni hom-bifunktor $hom : (pro^*\mathcal{A})^{op} \times (pro^*\mathcal{A}) \rightarrow Set$ bude neprekidan, tj. da bude (unutrašnji) Hom -bifunktor u kategoriju potpunih metričkih prostora Met_c . Primjerice, hom jest Hom na punoj podkategoriji inverznih nizova. Nadalje, otkriven je nuždan i dostatan uvjet da hom -bifunktor bude invarijantan. Primjerice, hom , tj. Hom , jest invarijantan na punoj podkategoriji inverznih nizova. Budući da se svaki morfizam gruboga oblika reprezentira, tj. realizira, kao jedincati morfizam-element odgovarajućega skupa $pro^*\mathcal{A}(\mathbf{X}, \mathbf{Y})$, to dobivena metrička struktura baca novo svjetlo i daje dublji uvid u grubi oblik.

Ključne riječi: pro^* -kategorija, podpuna ultrametrika, grubi oblik.

A complete ultrametric on pro^* -morphism sets

(Talk)

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For an arbitrary category \mathcal{A} , each inverse system \mathbf{X} in \mathcal{A} and each cofinite inverse system \mathbf{Y} in \mathcal{A} , the set $pro^*\mathcal{A}(\mathbf{X}, \mathbf{Y})$ admits a complete ultrametric structure. A necessary and sufficient condition for the corresponding hom-bifunctor $hom : (pro^*\mathcal{A})^{op} \times (pro^*\mathcal{A}) \rightarrow Set$ to be continuous (i.e., to be an internal Hom into the category of complete metric spaces Met_c) is established. For instance, hom is Hom on the full subcategory $tow^*\mathcal{A}$ of inverse sequences. Furthermore, a necessary and sufficient condition for hom to be invariant is established as well. For instance, hom , i.e., Hom , is invariant on the inverse sequences. Since the sets $pro^*\mathcal{A}(\mathbf{X}, \mathbf{Y})$ represent the appropriate coarse shape morphism sets, the obtained metric structure help us to get a better view into the coarse shape theory.

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