Completeness in Minkowski-Rådström-Hörmander spaces

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Joint work with J. Grzybowski.

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A Minkowski–Rådström-Hörmander space $\widetilde{X}$ is a quotient space over the family $\mathcal{B}(X)$ of all nonempty bounded closed convex subsets of a Banach space X. We prove in that a metric d_{BP} (Bartels–Pallaschke metric) is the strongest of all complete metrics in the cone $\mathcal{B}(X)$ and Hausdorff metric d_H is the coarsest of them. Our results follow from for more general case of a quotient space over an abstract convex cone S with complete metric d. We also extend a definition of Demyanov's difference (related to Clarke's subdifferential) of finite dimensional convex sets $A \overset{D}{-} B$ to infinite dimensional Banach space X and we prove in that Demyanov's metric generated by such extension, is complete.

References

[1] Grzybowski J., Przybycień H., *Completeness in Minkowski–Rådström–Hörmander spaces*, Optimization 2013, online: http://dx.doi.org/10.1080/02331934.2013.793330.