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Metric trees, hyperconvex hulls and extensions. (English summary)

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Summary: “In this paper we examine the relationship between hyperconvex hulls and metric trees. After providing a linking construction for hyperconvex spaces, we show that the four-point property is inherited by the hyperconvex hull, which leads to the theorem that every complete metric tree is hyperconvex. We also consider some extension theorems for these spaces.”

References

1. Aronszajn, A. and Panitchpakdi P.: *Extension of uniformly continuous transformations and hyperconvex metric spaces*, Pacific J. Math. 6, 405–439 (1956). [MR0084762 \(18,917c\)](#)
2. Bartolini, I., Ciaccia, P., Patella, M.: *String Matching with Metric Trees Using Approximate Distance*, SPIR, Lecture Notes in Computer Science, Springer-Verlag, Vol. 2476, 271–283 2002.
3. Bestvina, M.: *R-trees in Topology, Geometry, and Group Theory*, Handbook of geometric topology, pp. 55–91, North-Holland, Amsterdam, 2002. [MR1886668 \(2003b:20040\)](#)
4. Bridson, M. and Haefliger, A.: *Metric Spaces of Nonpositive Curvature*, Grundlehren der Mathematischen Wissenschaften, vol. 319, Springer-Verlag, Berlin, 1999. [MR1744486 \(2000k:53038\)](#)
5. Bugajewski, D. and Grzelaczyk, E.: *A fixed point theorem in hyperconvex spaces*, Arch. Math. 75, 395–400 (2000). [MR1785449 \(2001e:54062\)](#)
6. Buneman, P.: *A note on the metric properties of trees*, J. Combin. Theory Ser. B, 17, 48–50 (1974). [MR0363963 \(51 #218\)](#)
7. Day, M. M.: “Normed Linear Spaces”, Third edition, Springer-Verlag, Berlin, Heidelberg, New York. 1973. [MR0344849 \(49 #9588\)](#)
8. Deineko, V., Klinz, B. and Woeginger G. J.: *Four point conditions and exponential neighborhoods for symmetric tsp*, Proceedings of the seventeenth annual ACM-SIAM symposium on discrete algorithm, ACM Press, 544–553 (2006). [MR2368851](#)
9. Dress, A. W. M.: *Trees, tight extensions of metric spaces, and the cohomological dimension of certain groups: a note on combinatorial properties of metric spaces*, Adv. in Math. 53, 321–402 (1984). [MR0753872 \(86j:05053\)](#)
10. Dress, A. W. M., Moulton, V. and Terhalle, W.: *T-Theory, an overview*, European J. Combin. 17, 161–175 (1996). [MR1379369 \(97e:05069\)](#)
11. Isbell, J. R.: *Six theorems about injective metric spaces*, Comment. Math. Helv. 39, 439–447 (1964). [MR0182949 \(32 #431\)](#)
12. Johnson W. B., Lindenstrauss, J. and Preiss, D.: *Lipschitz quotients from metric trees and from Banach spaces containing l_1^1* , J. Funct. Anal. 194, 332–346 (2002). [MR1934607 \(2003h:46023\)](#)

13. Khamsi, M. A. and Kirk, W. A.: "An Introduction to Metric Spaces and Fixed Point Theory", Pure and Applied Math., Wiley, New York 2001. [MR1818603 \(2002b:46002\)](#)
14. Kirk, W. A.: *Hyperconvexity of R-Trees*, Fund. Math. 156, 67–72 (1998). [MR1610559 \(98k:54060\)](#)
15. Matoušek, J.: *Extension of Lipschitz mappings on metric trees*, Comment. Math. Univ. Carolinae 31, 99–104 (1990). [MR1056175 \(91d:54017\)](#)
16. Nachbin, L.: *A theorem of Hahn-Banach type for linear transformations*, Trans. Amer. Math. Soc. 68, 28–46 (1950). [MR0032932 \(11,369a\)](#)
17. Semple, C., Steel M.: *Phylogenetics*, Oxford Lecture Series in Mathematics and its Applications, 24 2003. [MR2060009 \(2005g:92024\)](#)
18. Tits, J.: *A theorem of Lie-Kolchin for trees*, Contributions to Algebra: a collection of papers dedicated to Ellis Kolchin, Academic Press, New York, 1977. [MR0578488 \(58 #28205\)](#)
19. Zippin, M.: *Extension of bounded linear operators*, Handbook of the geometry of Banach spaces, Vol.2, 1703–1741 (2003). [MR1999607 \(2004k:46024\)](#)

Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

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