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Pseudogroups of isometries of \mathbb{R} : Reconstruction of free actions on \mathbb{R} -trees. (English)

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Summary: Rips' theorem about free actions on \mathbb{R} -trees relies on a careful analysis of finite systems of partial isometries of \mathbb{R} . We associate a free action on an \mathbb{R} -tree to any finite system of isometries without reflection. Any free action may be approximated (strongly in the sense of Gillet-Shalen) by actions arising in this way. Proofs involve the use, in an essential way, of separation properties of systems of isometries. We also interpret these finite systems of isometries as generating sets of pseudogroups of partial isometries between closed intervals of \mathbb{R} .

MSC:

37E99 Low-dimensional dynamical systems

22E65 Infinite-dimensional Lie groups and their Lie algebras: general properties

58H05 Pseudogroups and differentiable groupoids

Cited in 5 Documents

Keywords:

one-dimensional dynamical systems; iterations; systems of isometries; pseudogroups

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References:

- [1] Morgan, Ann. Math. 122 pp 403– (1988)
- [2] DOI: 10.1016/0166-8641(89)90029-1 · Zbl 0675.20033 · doi:10.1016/0166-8641(89)90029-1
- [3] Gromov, Pub. I.H.E.S. 53 pp 53– (1981) · Zbl 0474.20018 · doi:10.1007/BF02698687
- [4] DOI: 10.1007/BF02773004 · Zbl 0824.57001 · doi:10.1007/BF02773004
- [5] Veblen, Camb. Tracts Math. 29 pp none– (1932)
- [6] Fathi, Astérisque none pp 66– (1979)
- [7] Singer, J. Anal. Math. 15 pp 1– (1965)
- [8] Ehresmann, Coll. Int. Top. Alg. none pp 3– (1947)
- [9] Shalen, Dendrology and its Applications (1991) · Zbl 0843.20018
- [10] Shalen, Dendrology of Groups: An Introduction 8 (1987) · Zbl 0649.20033
- [11] Arnoux, C. R. Acad. Sci. 292 pp 75– (1981)
- [12] Salem, Progress in Mathematics 73 pp 265– (1988)
- [13] DOI: 10.1007/BF01388736 · Zbl 0577.58021 · doi:10.1007/BF01388736
- [14] DOI: 10.2307/2373226 · Zbl 0136.20903 · doi:10.2307/2373226
- [15] Rourke, PL Topology (1985)
- [16] DOI: 10.1090/S0273-0979-1992-00237-9 · Zbl 0767.05054 · doi:10.1090/S0273-0979-1992-00237-9
- [17] Molino, Progress in Mathematics 73 (1988)
- [18] DOI: 10.1215/S0012-7094-93-06925-6 · Zbl 0794.57001 · doi:10.1215/S0012-7094-93-06925-6
- [19] DOI: 10.1007/BF01244321 · Zbl 0791.58055 · doi:10.1007/BF01244321
- [20] Levitt, J. Diff. Geom. 31 pp 711– (1990)
- [21] Haefliger, Proc. Vth Coll. in Differential Geometry 131 pp 174– (1985)
- [22] Haefliger, Astérisque 116 pp 70– (1984)
- [23] Gillet, J. Diff. Geom. 32 pp 605– (1990)
- [24] Rimlinger, Exp. Math. 1 pp 95– (1992) · Zbl 0772.58068 · doi:10.1080/10586458.1992.10504251
- [25] DOI: 10.2307/2154034 · Zbl 0803.20017 · doi:10.2307/2154034
- [26] Paulin, Proc. Haifa 1992 Conf. on Geometric Topology. Contemp. Math. Amer. Math. Soc. 164 pp 187– (1994)

- [27] Paulin, Proc. Coll. sur les variétés de dimension 3 pp none– (1989)
- [28] DOI: [10.1007/BF01394344](https://doi.org/10.1007/BF01394344) · [Zbl 0673.57034](https://zbmath.org/journal/Zbl/0673.57034) · [doi:10.1007/BF01394344](https://doi.org/10.1007/BF01394344)
- [29] DOI: [10.1007/BF02565815](https://doi.org/10.1007/BF02565815) · [Zbl 0795.57009](https://zbmath.org/journal/Zbl/0795.57009) · [doi:10.1007/BF02565815](https://doi.org/10.1007/BF02565815)

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