

Papadopoulos, Kyriakos; Acharjee, Santanu; Papadopoulos, Basil K.

The order on the light cone and its induced topology. (English) Zbl 1387.83010

Int. J. Geom. Methods Mod. Phys. 15, No. 5, Article ID 1850069, 7 p. (2018).

MSC:

- 83C05 Einstein's equations (general structure, canonical formalism, Cauchy problems) Cited in 4 Documents
- 83F05 Relativistic cosmology
- 54H12 Topological lattices, etc. (topological aspects)
- 54F05 Linearly ordered topological spaces, generalized ordered spaces, and partially ordered spaces
- 06A15 Galois correspondences, closure operators (in relation to ordered sets)

Keywords:

null cone; causal orders; horismos; Zeeman-Göbel topologies; ambient cosmology; topologization of a spacetime

Full Text: [DOI](#) [arXiv](#)

References:

- [1] Kronheimer, E. H.; Penrose, R., On the structure of causal spaces, Proc. Camb. Phil. Soc., 63, 481, (1967) · [Zbl 0148.46502](#)
- [2] Penrose, R., Techniques of Differential Topology in Relativity, (1972) · [Zbl 0321.53001](#)
- [3] Good, C.; Papadopoulos, K., A topological characterization of ordinals: Van dalen and wattel revisited, Topology Appl., 159, 1565-1572, (2012) · [Zbl 1241.54021](#)
- [4] Papadopoulos, K.; Rassias, T.; Toth, L., Topics in Mathematical Analysis and Applications, On the orderability problem and the interval topology, (2014), Springer-Verlag
- [5] Zeeman, E. C., The topology of Minkowski space, Topology, 6, 161-170, (1967) · [Zbl 0149.41204](#)
- [6] Gobel, R., Zeeman topologies on space-times of general relativity theory, Comm. Math. Phys., 46, 289-307, (1976) · [Zbl 0324.57002](#)
- [7] Zeeman, E. C., Causality implies the Lorentz group, J. Math. Phys., 5, 490-493, (1964) · [Zbl 0133.23205](#)
- [8] Antoniadis, I.; Cotsakis, S.; Papadopoulos, K., The causal order on the ambient boundary, Mod. Phys. Lett. A, 31, 20, (2016)
- [9] Gierz, G., A Compendium of Continuous Lattices, (1980), Springer-Verlag · [Zbl 0452.06001](#)
- [10] Reed, G. M., The intersection topology w.r.t. the real line and the countable ordinals, Trans. Am. Math. Soc., 297, 2, 509-520, (1986) · [Zbl 0602.54001](#)
- [11] Papadopoulos, K., On the possibility of singularities on the ambient boundary, Int. J. Geom. Methods Mod. Phys., 14, 10, (2017) · [Zbl 1386.83138](#)
- [12] Antoniadis, I.; Cotsakis, S., Topology of the ambient boundary and the convergence of causal curves, Mod. Phys. Lett. A, 30, 1550161, (2015)
- [13] Penrose, R., The Road to Reality: A Complete Guide to the Laws of the Universe, (2007), Vintage Books
- [14] Hawking, S. W.; King, A. R.; McCarthy, P. J., A new topology for curved spacetime which incorporates the causal, differential, and conformal structures, J. Math. Phys., 17, 2, 174-181, (1976) · [Zbl 0319.54005](#)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.