General Relativity and Quantum Cosmology

The structure of boundary parameter property satisfying sets

B. E. Whale

(Submitted on 28 Jan 2010)

Precise definitions of singularities in General Relativity rely on a set of curves. Many boundary constructions force a particular set of curves by virtue of the construction. The abstract boundary, however, allows the set of curves to be chosen. This set, therefore, plays a very important role in the use of the abstract boundary as the definition of a singularity or point at infinity depends on it. The sets of curves used in the abstract boundary must satisfy the boundary parameter property. This property obfuscates the construction of and relationships between these sets of curves. In this paper we lay the ground work for an analysis of these sets of curves by showing that they are in one-to-one correspondence with certain sets of inextendible curves. As an application of this result we show how the usual set operations can be extended to boundary parameter property satisfying sets of curves, allowing for their comparison. These results provide an interpretation of what information boundary parameter property satisfying sets give us, provide tools to analyse their use and allow for easier physical interpretation of the abstract boundary classification.

Comments:	17 pages, 0 figures, submitted to Journal of Physics A
Subjects:	**General Relativity and Quantum Cosmology (gr-qc)**
Cite as:	**arXiv:1001.5091v1 [gr-qc]**

Submission history

From: Ben Whale [view email]
[v1] Thu, 28 Jan 2010 03:22:33 GMT (23kb)

Which authors of this paper are endorsers?

Link back to: arXiv, form interface, contact.

Download:

- PostScript
- PDF
- Other formats

Current browse context:

gr-qc
< prev | next >
new | recent | 1001

References & Citations

- SLAC-SPIRES HEP (refers to | cited by)
- CiteBase

Bookmark (what is this?)

- CiteULike logo
- Connotea logo
- BibSonomy logo
- Mendeley logo
- Facebook logo
- del.icio.us logo
- Digg logo
- Reddit logo