

Cornell University Library

arXiv.org > gr-qc > arXiv:1107.5274

Search or Article-id

All papers 🚽 Go!

(Help | Advanced search)

Download:

- PDF
- PostScript
- Other formats

Current browse context: gr-qc

< prev | next >

new | recent | 1107

Change to browse by:

math math-ph

References & Citations

- INSPIRE HEP (refers to | cited by)
- NASA ADS



General Relativity and Quantum Cosmology

Holomorphic Lorentzian Simplicity Constraints

Maité Dupuis, Laurent Freidel, Etera R. Livine, Simone Speziale

(Submitted on 26 Jul 2011 (v1), last revised 20 Feb 2012 (this version, v2))

We develop an Hamiltonian representation of the sl(2,C) algebra on a phase space consisting of N copies of twistors, or bi-spinors. We identify a complete set of global invariants, and show that they generate a closed algebra including gl(N,C) as a subalgebra. Then, we define the linear and quadratic simplicity constraints which reduce the spinor variables to (framed) 3d spacelike polyhedra embedded in Minkowski spacetime. Finally, we introduce a new version of the simplicity constraints which (i) are holomorphic and (ii) Poisson-commute with each other, and show their equivalence to the linear and quadratic constraints.

Comments: 20 pages. v2: explicit counting of the holomorphic constraints added, and minor amendments

Subjects: General Relativity and Quantum Cosmology (gr-qc); Mathematical Physics (math-ph)

Cite as: arXiv:1107.5274 [gr-qc] (or arXiv:1107.5274v2 [gr-qc] for this version)

Submission history

From: Simone Speziale [view email] [v1] Tue, 26 Jul 2011 17:52:57 GMT (22kb) [v2] Mon, 20 Feb 2012 12:54:16 GMT (23kb)

Which authors of this paper are endorsers?

Link back to: arXiv, form interface, contact.