Quantum Gravity Colloquium 6



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Wolfgang Wieland: Twistorial phase space for complex Ashtekar variables

Thursday 6 October 2011 12:00 (45 minutes)

We generalise the SU(2) spinor framework of twisted geometries developed by Dupuis, Freidel, Livine, Speziale and Tambornino to the Lorentzian case, that is the group SL(2,C). We show that the phase space for complex valued Ashtekar variables on a spinnetwork graph can be decomposed in terms of twistorial variables. To every link there are two twistors—one to each boundary point—attached. The formalism provides a new derivation of the solution space of the simplicity constraints of loop quantum gravity. Key properties of the EPRL spinfoam model are perfectly recovered.