Seventeenth Marcel Grossmann Meeting



Contribution ID: 630

Type: Plenary talk

Bi-twistors: an extension of twistor theory for general space-times

Monday, 8 July 2024 09:30 (30 minutes)

Twistor theory was initially developed to describe the geometry of Minkowski space-time in terms of its null geodesics. The natural generalization to curved space-times requires the ubiquitous existence of α -surfaces, this requiring the Weyl curvature to be anti-self-dual, which for a real space-time implies conformal flatness. A bi-twistor, however, incorporates both a twistor and a dual-twistor, together with their canonical commutation relations, and the role of the α -surfaces is simply replaced by that of null geodesics, which are ubiquitous in any space-time. Accordingly, bi-twistor theory can be developed so as to apply to space-times generally.

Presenter: PENROSE, Roger

Session Classification: Monday plenary session