1138-53-113   **Amir Babak Aazami** and **Gideon Maschler*** (`gmaschler@clarku.edu`), Dept. of Mathematics and Computer Science, Clark University, Worcester, MA 01610. *Kähler metrics from Lorentzian geometric data in dimension four.*

We give a construction associating a family of Kähler metrics to any semi-Riemannian metric g on a four-manifold M which is equipped with two distinguished vector fields satisfying properties defined via shear, twist and other Lie bracket conditions. In most of our examples the domain of such a Kähler metric g_K coincides with M. Under certain conditions the metrics g_K and g share various first order properties, like a joint Killing field.

Our examples are Lorentzian, including de Sitter spacetime, gravitational plane waves and Petrov type D metrics such as the Kerr metric. For SKR-type Kähler metrics, which include the classical extremal metric conformal to Page's Einstein metric, we provide an ansatz which inverts the construction: it produces Lorentzian metrics to which the SKR metric is associated. (Received February 12, 2018)