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Alan S McRae* (mcraea@wlu.edu), Alan McRae, Robinson Hall, Washington and Lee University, Lexington, VA 24450. *Conformal geometry and possible kinematics for 2-dimensional spacetimes.*

We give an elementary review of Bacry and Levy-Leblond's work on possible kinematics as applied to 2-dimensional spacetimes. Conformally flat models for homogeneous spacetimes for all but one of the kinematical groups can then be easily given by (suitably restricted regions of) the complex number plane $\mathbb{C} = \{x + iy \mid i^2 = -\kappa_2\}$ with the (possibly indefinite or degenerate) hermitian metric

$$ds^2 = \frac{dz d\bar{z}}{(1 + \kappa_1 z \bar{z})^2}$$

(the real constants κ_1 and κ_2 are related to the speed of light c and universe time radius τ by such formulae as $\kappa_2 = -\frac{1}{c^2}$ and $\kappa_1 = \pm\frac{1}{\tau^2}$). By letting the constants κ_1 or κ_2 approach zero, we can see the effect of the group contractions evident in Bacry and Levy-Leblond's construction of the possible kinematical groups. (Received September 18, 2007)