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Degenerate Spin Structures and the Lévy-Leblond Equation

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Abstract: Newton-Cartan manifolds and the Galilei group are defined by the use of co-rank one degenerate metric tensor. Newton-Cartan connection is lifted to the degenerate spinor bundle over a Newton-Cartan 4-manifold by the aid of degenerate spin group. Levy-Leblond equation is constructed with the lifted connection.