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Symmetry classification of General rank-3 Pfaffian systems in 5-dimension.

In his famous *five-variables* paper, Cartan provided normal forms for general rank-3 Pfaffian systems on a 5-manifold, whose symmetry algebras have dimension ≥ 6 . I will present new normal forms for those Pfaffian systems whose symmetry algebra is 3-dimensional and acting freely. Applications to the integration of involutive systems of PDE in the plane and to the study of Darboux integrability will be described. (Received February 05, 2009)