998-53-112 **Khadiga Arwini** (K.Alrawini@postgrad.umist.ac.uk), Department of Mathematics, University of Manchester, M60 1QD Manchester, Libya, **Lilia Del Riego*** (lilia@galia.fc.uaslp.mx), Departamento de Matematicas, Facultad de Ciencias, Universidad Autonoma de San Luis Potosi, San Luis Potosi, SL P SLP, 78900, and **C TJ Dodson** (dodson@umist.ac.uk), Department of Mathematics, University of Manchester, M60 1QD Manchester, England. *Universal connection and curvature for statistical manifold geometry.*

Statistical manifolds [1] are representations of families of probability density functions (ie subadditive measures of unit weight) that allow differential geometric methods to be applied to problems in stochastic processes, mathematical statistics and information theory. A number of linear connections arise on a statistical manifold and so the corresponding universal connection and curvature [3] is important; then all linear connections and their curvatures are pullbacks. Statistical manifolds arising from the exponential families are central and one particular family is that of gamma distributions, which we showed recently [2] to have important uniqueness properties in stochastic processes. Here we provide formulae for universal connections and curvatures on exponential families and explicitly for the manifold of gamma distributions.

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[3] L.A. Cordero, C.T.J. Dodson and M. deLeon. Differential Geometry of Frame Bundles. Kluwer, Dordrecht, 1989.

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