

INFORMATIVE BARYCENTRES IN STATISTICS

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Abstract. Barycentres of a discrete probability measure on a dually flat statistical manifold are introduced. They are shown to be unique and to behave as barycentres in Euclidean space. The estimation of these barycentres is studied. Potential applicative usefulness of informative barycentres include the problem of interpolating a statistical manifold valued map and the problem of model merging, which consists in merging several statistical models into a unique one. The results are illustrated on the exponential family, for which a projection theorem is proved.

Key words and phrases: Barycentre, density estimation, entropy, differentiable-geometrical methods, statistical manifolds, dual affine connections.

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