LOCAL MIXTURES OF NATURAL EXPONENTIAL FAMILIES WITH QUADRATIC VARIANCE FUNCTION

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Recent advances in differential geometric methods in statistics have given rise to the idea of local mixture models. These models are essentially bundles of finite dimensional affine subspaces of some higher dimensional affine space in the same way as exponential families. Boundaries play an important role in both geometric and inferential structures of the local mixture.

The poster presents an application of these models to the estimation problem in mixtures of Natural Exponential Families with Quadratic Variance Function when the mixing distribution is an appropriate Dispersion Model. The use of dispersion models allows the *small mixing assumption* (inherent to local mixture models) to be clearly defined. This will be exemplified through mixtures of the negative exponential family.