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Identification of mixture models using support variations

We consider the issue of identifying nonparametrically mixture models. In these models, the observed variables all depend on an unobserved component, but are mutually independent conditional on this component. Such models are important in economics, in particular for the measurement error and the auction literatures. Traditional approaches rely on parametric assumptions or strong functional restrictions. We show that these models are actually identified nonparametrically if a moving support assumption is satisfied. More precisely, we suppose that the supports of the observed variables move with the true value of the unobserved component. We show that this assumption is empirically relevant and testable. Finally, as the diagonalization technique introduced by Hu (2008) allows to obtain similar results, we compare both approaches.

(This is joint work with Ph. Février.)