We discuss several applications of the Gaussian mixture method. This technique allows us, in certain situations, to pass from inequalities valid for Gaussian measures to more general situations. One example is the celebrated Gaussian correlation inequality due to Thomas Royen. It turns out that the validity of this inequality implies similar inequalities for other measures, including uniform measure on the Euclidean hemisphere. Another example is the so-called strong B-inequality, valid for the standard Gaussian measure due to the result of Cordero-Erausquin, Fradelizi and Maurey. We shall explain how this fact implies similar statements for exponential measure and certain measures with rotation invariant densities. Finally, Gaussian mixtures allow us to derive relatively simple analytic formulas for the volumes of the sections of cross-polytope of arbitrary codimension. Relations to the so-called B-conjecture will be mentioned.

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