1099-60-298   **Ionel Popescu*** (`ipopescu@math.gatech.edu`), 686 Cherry Street, Atlanta, GA 30332.
Refinements of the Free Poincare Inequality.

The classical Poincare inequality for the normal distribution is exactly the spectral gap of the Ornstein-Uhlembeck operator. Two extensions are due to Houdre-Kagan for the normal distribution and to Brascamp-Lieb for more general log-concave distributions on the other.

In this talk I will show how one can view both of these from the same perspective and extend a similar treatment to the free Poincare inequality in one dimension and some versions in several dimensions.

From the process point one way of treating the inequalities is via the semigroup theory of the free Ornstein-Uhlembeck operator.

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