



DEPARTAMENTO de MATEMÁTICAS

Seminario REY PASTOR

GEOMETRÍA DIFERENCIAL Y CONVEXA

The square negative correlation property on ℓ_p^n -balls

David Alonso Gutiérrez
Universidad de Zaragoza

Summary: A log-concave random vector X in \mathbb{R}^n is said to verify the negative square correlation property with respect to an orthonormal basis $\{\eta_i\}_{i=1}^n$ if for every $i \neq j$

$$\mathbb{E}\langle X, \eta_i \rangle^2 \langle X, \eta_j \rangle^2 - \mathbb{E}\langle X, \eta_i \rangle^2 \mathbb{E}\langle X, \eta_j \rangle^2 \leq 0.$$

If X is uniformly distributed on an ℓ_p^n -ball, this property is verified with respect to the canonical basis, implying the variance conjecture on this family of convex bodies. In the case of $p = 2, \infty$, the negative square correlation property is true not only with respect to the canonical basis but with respect to any orthonormal basis. We will study this property with respect to any orthonormal basis for other values of p , showing that the ℓ_p^n -balls satisfy this property with respect to any orthonormal basis if and only if $p \geq 2$.

Día y lugar:

Jueves 19 de Julio, 12:00 horas

Sala Euler (0.01)

<http://www.matematicas.um.es/>