IMUB | Institut de Matemàtica

Col·loqui

Complex Brunn-Minkowski theorems

Dimecres 4 d'abril de 2018

Bo Berndtsson

Chalmers University of Technology, Göteborg

The classical Brunn-Minkowski theorem is an inequality for volumes of convex bodies. It says that if A and B are convex bodies in $\mathbb{R}^n$ then their Minkowski sum

$$A + B := \{a + b; a \in A, b \in B\}$$

satisfies the inequality

$$\mathrm{Vol}(A + B)^{1/n} \geq \mathrm{Vol}(A)^{1/n} + \mathrm{Vol}(B)^{1/n}.$$

It has many applications and is particularly powerful since in some ways it goes in the opposite direction to simpler convexity statements like Hölder's inequality.

Its complex counterpart is a similar statement for L^2-norms of holomorphic functions (or forms, or sections of line bundles) on domains in $\mathbb{C}^n$ or complex manifolds. The complex version contains the real version as a special case, but is considerably more general. I will explain how this works and, time permitting, also indicate a few applications in algebraic and Kähler geometry.

Lloc: Aula T1, Facultat de Matemàtiques i Informàtica, UB
Hora: 12.15

www.imub.ub.edu

UNIVERSITAT DE BARCELONA