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On successive radii of convex bodies

Maria Hernandez-Cifre *

mhcifre@um.es

For a convex body K of the n -dimensional Euclidean space, the successive outer and inner radii, $i = 1, \dots, n$, are defined, respectively, as the smallest radius of a K -containing solid cylinder with i -dimensional spherical cross section, and as the radius of the greatest i -dimensional ball contained in K . These measures generalize the well-known functionals diameter, minimal width, circumradius and inradius of K , and can be also defined via the circumradius/inradius of suitable projections/sections of the convex body.

In this talk I will present a brief survey on some classical and recent results on this topic, and will focus mainly in the behavior of the successive radii with respect to the so called p -addition of convex bodies, which was introduced by Firey in 1962. This study will also provide some results on the radii of the p -balls.

This is a joint work with Bernardo Gonzalez.

*Departamento de Matemáticas, Universidad de Murcia, Campus de Espinardo, 30100 Murcia, SPAIN.