1015-52-218   **Maria Angeles Alfonseca*** (`mariaa@math.ksu.edu`), Department of Mathematics, 138 Cardwell Hall, Kansas State University, Manhattan, KS 66506, and **Dmitry Ryabogin** and **Artem Zvavitch**. *Geometric properties of intersection bodies.* Preliminary report.

Intersection bodies are convex bodies whose radial function is a positive definite distribution. They were introduced in 1988 by Lutwak in connection to the Busseman-Petty problem. In general, no much is known about the geometry of intersection bodies, even of those that are polytopes.

In 1998, Koldobsky introduced a necessary condition for a convex body to be an intersection body in terms of the second derivative of its norm. This result allowed him to prove that the unit ball of the q-sum of two spaces X and Y is not an intersection body.

In our work we use the techniques of Koldobsky's to prove that, in dimension 7 or more, an intersection body cannot be a direct sum of two convex bodies. (Received February 06, 2006)