1026-52-110 **Andrea Colesanti*** (colesant@math.unifi.it), Dipartimento di Matematica 'U. Dini', Viale Morgagni 67/a, Firenze, Italy, and **Chiara Bianchini** (chiara.bianchini@math.unifi.it), Dipartimento di Matematica 'U. Dini', Viale Morgagni 67/a, Firenze, Italy. *A sharp Rogers-Shephard type inequality for the p-difference body of a planar convex body.*

We prove a sharp Rogers-Shephard type inequality for the p-difference body of a convex body in the two-dimensional case, for every $p \geq 1$. More precisely, let K be a convex body in $\mathbf{R}^2$, containing the origin and let $p \geq 1$. There exists a constant c_p, depending on p only, such that

$$V_2(K +_p (-K)) \leq c_p V_2(K)$$

and equality holds if K is a triangle with one vertex at the origin. Here V_2 is the two-dimensional volume, $+_p$ denotes the p-sum of convex bodies and $-K$ is the reflected body of K with respect to the origin.

In the proof of this result we use the so called *parallel chord movements*, which are continuous one-parameter deformations of convex bodies. In particular the main tool in proof of the above inequality is the following fact: if K_t is a parallel chord movement then the volume of its difference body, i.e. $V_2(K_t +_p (-K_t))$, is a convex function of the parameter t. (Received February 21, 2007)