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Zvavitch**. *t-sections of convex bodies*. Preliminary report.

We study the following problem: Let K be a convex body and let t be a small positive number. The t -sections of K are the intersections of K with hyperplanes tangent to the ball centered at the origin and with radius t . If all the t -sections of K have the same volume, is K a ball? We present a partial answer to this question in dimension 4. (Received September 01, 2012)