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Dmitry Ryabogin* (ryabogin@math.kent.edu), Mathematics and Computer Science Building, Summit Street, Kent, OH 44242. *Is the ball the only body of revolution having the constant perimeter of all boundaries of central sections?* Preliminary report.

This is a preliminary report on the joint work with Ralf Howard, Fedor Nazarov and Artem Zvavitch. We discuss known results related to the following problem. Let K be the body of revolution in R^3 . Assume that the boundaries of all sections of K (by planes passing through the origin) have the same perimeter. Does it follow that K is a Euclidean ball? (Received August 19, 2008)