

# Banach-Mazur distance to centrally symmetric convex bodies

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## Abstract

The celebrated theorem of F. John about the ellipsoid of maximal volume inside a convex body is a powerful tool to estimate the Banach-Mazur distance of a convex body to the euclidean ball. But what should we do if we want to estimate the Banach-Mazur distance for two arbitrary convex bodies? Following the article [1], we present a version of John's theorem for the position of maximal volume of a convex body inside another convex body. As an application we give an optimal upper estimate for the Banach-Mazur distance of a centrally symmetric convex body and a general convex body.

## References

- [1] Y. Gordon, A.E. Litvak, M. Meyer, A. Pajor, *John's decomposition in the general case and applications*, J. Diff.Geom.**68**, (2004), 99-119