

Elisabeth Werner  
Case Western University Cleveland  
*Everything floating*

Based on joint work with Olaf Mordhorst, we discuss a duality relation between floating and illumination bodies.

The definitions of these two bodies suggest that the polar of the floating body should be similar to the illumination body of the polar. We consider this question for the class of centrally symmetric convex bodies.

We provide precise estimates for  $l_p^n$ -balls and for centrally symmetric convex bodies with everywhere positive Gauss curvature.

We also investigate the problem for the class of centrally symmetric polytopes.

Our estimates show that equality of the polar of the floating body and the illumination body of the polar can only be achieved in the case of ellipsoids.

Time permitting, we will further discuss the notion of a floating function for log concave functions. This is based on joint work with Ben Li and related to affine invariants for log concave functions.