

# EVERY 2-DIMENSIONAL BANACH SPACE HAS THE MAZUR-ULAM PROPERTY

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A Banach space  $X$  is defined to have the Mazur–Ulam property if for every Banach space  $Y$  every isometry  $f : S_X \rightarrow S_Y$  between the unit spheres of  $X, Y$  extends to a linear isometry of the spaces  $X, Y$ . In 1987 Tingley posed a (still open) problem if every Banach space has the Mazur-Ulam property. It has been shown that many classical Banach spaces (like  $C(K)$ ,  $\ell_p(\Gamma)$ ,  $L_p(\mu)$ ) do have the Mazur-Ulam property. The main result of the talk is the following solution of the Tingley problem in dimension 2.

**Theorem 1.** *Every 2-dimensional Banach space has the Mazur–Ulam property.*

## REFERENCES

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