Tingley's problem on the extension of surjective isometries from the unit sphere of a C*-algebra

Antonio M. Peralta

Abstract

Tingley's problem on the extension of surjective isometries between the unit spheres of two Banach spaces is as simple to state as difficult to solve. The problem asks when a surjective isometry between the unit spheres of two normed spaces can be extended to a surjective real-linear isometry between the spaces. The problem remains open for Banach spaces of dimension greater than or equal to 3. Only in 2022 a positive answer was given for 2-dimensional Banach spaces by T. Banakh. We shall present in this talk some of the recent advances, and positive answers, in case that one of the spaces is a C*-algebra.