Deformations of Spherical Isometric Foldings

Given two spherical isometric foldings $f$ and $g$, $f$ is said to be deformable in $g$ if and only if there exists a continuous homotopy $H : [0, 1] \times S^2 \to S^2$, such that for each $t \in [0, 1]$, $H_t$ given by $H_t(x) = H(t, x)$ is an isometric folding.

The deformation of special classes of isometric foldings will be considered. It will be shown that, within these classes, any isometric folding is continuously deformable in the standard spherical folding $f_* (f_*(x, y, z) = (x, y, |z|))$, reinforcing Robertson’s conjecture.

Supported partially by CIDMA, through the Foundation for Science and Technology (FCT).