

GEOMETRIC VIEW OF CONFORMALLY INVARIANT EQUATIONS

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Abstract:

This work is about conformally invariant equations from a geometric point of view. In other words, given a solution to an elliptic conformally invariant equation in a subdomain of the sphere, following ideas of Espinar-Gálvez-Mira, we construct an elliptic hypersurface in the Hyperbolic space. We can related analytic conditions of the solution to the conformally invariant elliptic equation and the geometry of the hypersurface.

In this work we show a non-existence theorem for degenerate elliptic problems for conformal metrics on the closed northern hemisphere of the m -sphere with minimal boundary. On the compact annulus in the m -sphere, we prove a uniqueness result for degenerate problem with minimal boundary. We prove a non-existence theorem for degenerate problems on the compact annulus in the m -sphere under the hypothesis that there is a solution on the closed northern hemisphere of the m -sphere minus the north pole such that satisfies certain property.