

1030-53-270

Hongyou Wu*, Department of Mathematics, Northern Illinois University, DeKalb, IL 60115.
Constant Mean Curvature Surfaces with Symmetries. Preliminary report.

This is joint work with Josef Dorfmeister.

We investigate properties of potentials for (non-zero) constant mean curvature surfaces with a given (extrinsic) symmetry, mostly under the assumption that the surfaces have a fixed point under the symmetry. These potentials are among the ones used in a Weierstrass type representation of all constant mean curvature surfaces. In general, symmetries are not preserved under the dressing action, which is usually needed for constructing constant mean curvature surfaces with a non-trivial topology. However, for a class of potentials for constant mean curvature n -noids, where n is greater than or equal to 3, we show that the dressing needed for constructing the n -noids actually respects symmetries. In this way, several classes of n -noids are produced; in particular, the (axes of the) ends of some of these n -noids are not coplanar. (Received August 05, 2007)