

Homothetic Motions and Surfaces With Constant Curvatures in Lorentz 3-Space

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ABSTRACT

In this work we search the surfaces with constant curvatures in Lorentz 3-space, whose generating curve is a graph of a polynomial or Lorentzian circle under homothetic motion groups. Also we look for umbilic points and umbilic surfaces. In the first case we show that the degree of the polynomial is 0 or 1, that is the surfaces generated by graph of polynomials are ruled surfaces. But the surfaces, generated by a Lorentzian circle under homothetic motion groups, can not have constant or zero mean curvature. In the second case, we find some generalized umbilic surfaces.

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