

## On certain classes of Weingarten surfaces in $SL(2, R)$ space

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A Weingarten surface is a surface satisfying the Jacobi equation

$$\Phi(K, H) = \det \begin{pmatrix} K_u & K_v \\ H_u & H_v \end{pmatrix} = 0,$$

where  $K$  is Gaussian curvature and  $H$  is mean curvature of the surface.

The study of Weingarten surfaces was initiated by J. Weingarten in 1861. E. Beltrami and U. Dini few years later proved that the only non-developable Weingarten ruled surface in Euclidean 3-space is a helicoidal ruled surface. In the last decade several papers on Weingarten surfaces in different 3-dimensional spaces have appeared (see [1, 2, 3, 4]).

Motivated by the fact that there are no results about Weingarten surfaces in  $SL(2, R)$  space, we examine some classes of Weingarten surfaces using the right half-space model of  $SL(2, R)$  space.

**Key words:**  $SL(2, R)$  geometry, Weingarten surface, ruled surface

**MSC 2010:** 53C30, 53A10.

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