1131-53-57   **Rafael Lopez*** (`rcamino@ugr.es`), Departamento de Geometria y Topologia, Universidad de Granada, 18071 Granada, Spain. *Construction of new minimal and maximal surfaces: the Björling problem and duality.*

The Björling problem consists of finding a minimal surface in Euclidean space $\mathbb{E}^3$ containing a given curve and a prescribed unit normal vector to the surface along this curve. Under holomorphic assumptions, Schwarz proved local existence obtaining an expression of the parametrization of the minimal surface involving nothing but integrals and analytic continuation of the initial data. There is a similar Björling problem for zero-mean curvature spacelike surfaces (maximal surfaces) in Lorentz-Minkowski space $\mathbb{L}^3$. Although the parametrization of the surface is simple, in the literature only a few explicit parametrizations of minimal/maximal surfaces are known.

In this talk we provide new and many examples of minimal surfaces by solving the Björling problem for a large class of curves and similar constructions can be done in $\mathbb{L}^3$. Finally, we relate minimal surfaces in $\mathbb{E}^3$ to maximal surfaces in $\mathbb{L}^3$ by the correspondence known as duality and we investigate whether two congruent minimal (maximal) surfaces have congruent dual maximal (minimal) surfaces. (Received July 17, 2017)