1159-53-56 **Rafael Lopez*** (`rcamino@ugr.es`), Dpt. Geometria y Topologia, University of Granada, 18071 Granada, Spain. *Surfaces with constant curvature in Euclidean space: old problems and new results.*

Surfaces with constant Gauss curvature and constant mean curvature play a central role in classical differential geometry of Euclidean space $\mathbb{R}^3$. In order to find explicit examples of such surfaces, it is natural to impose some geometric property on the surface, such for instance, that the surface is rotational or that is ruled. This idea appears already at the beginning of the classical theory: it is enough to mention works of Euler, Meusnier, Scherk, Schwarz and Riemann. In this talk, we address two techniques that were developed in the XIXth century and that have been, in part, forgotten over in the course of time.

A first class of surfaces are the translation surfaces, which are surfaces can be locally written as the sum of two space curves. We classify all translations surfaces with constant Gauss curvature. In case of minimal translation surfaces, we give a procedure to find many examples.

The second family of surfaces are those ones that can be expressed by separation of variables $f(x) + g(y) + h(z) = 0$. We give a full classification of separable surfaces with constant Gaussian curvature and if the mean curvature is a non-zero constant, we prove that the surface is rotational.

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