

# Characterization of spherical immersions

RAUL C. VOLPE

(in collaboration with Juan Monterde)

*Department of Mathematics, University of Valencia, Valencia, Spain*

In the classical study of surfaces in  $\mathbb{R}^3$ , the Gauss curvature and the mean curvature are the basic invariant scalar functions which can characterize different geometrical properties of a surface. Working with surfaces in  $\mathbb{R}^{n+2}$  it is found new invariant scalar functions necessary in order to characterize each surface. In this talk we review the generalizations of the scalar invariants for immersions of surfaces in  $\mathbb{R}^{n+2}$  from the previous works by J. A. Little, [1], and by A. Montesinos-Amilibia, [3], and we study the surfaces whose image is contained in a hypersphere.

## References

- [1] Little, J. A. On singularities of submanifolds of higher dimensional Euclidean spaces, *Annali di Matematica Pura ed Applicata, Series 4*, **83**, 261–335, 1969.
- [2] Monterde, J., Volpe, R. C. Characterization of spherical immersions of surfaces in  $\mathbb{R}^4$  *Bulletin of the Brazilian Mathematical Society, New Series*, 2016.
- [3] Montesinos-Amilibia, A. Invariants of the second fundamental form *Matemàtiques*, **5**, 119–140, 2010.