

Sigma models and canonical hypersurfaces

Veronique Hussin (Université de Montreal)

The construction of real surfaces in $N^2 - 1$ dimensions, obtained from the sigma model $CP(N - 1)$, has been discussed in different papers during the last years. It is based on the properties of the relevant projectors constructed from finite action solutions of the sigma model. Such solutions, are given in terms of holomorphic and antiholomorphic functions. It exists also mixed functions constructed from one special type (holomorphic, for example) and a process of orthogonalisation. It has been shown recently that some of these surfaces are related to a fundamental projector P_0 , constructed out of holomorphic solutions. New surfaces were also obtained by constructing new projectors out of mixed solutions.

In this presentation, we want to give a description of such surfaces through a canonical formalism. These surfaces are characterised by quadratic equations on the components of a vector in \mathbf{R}^{N^2-1} . The question of independence of the coordinates is also considered. Indeed, special solutions constructed from the holomorphic Veronese sequence give rise to maximally reduced hypersurfaces.