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*Supersymmetric sigma models and constant solutions*

It was recently shown how to construct surfaces immersed in the  $su(N)$  Lie algebra from solutions of the bosonic  $CP^{N-1}$  sigma model. The method has also been generalized to more general Grassmannian sigma models  $G(M, N)$ . Furthermore, we know in many cases the conditions on the solutions to lead to constant gaussian curvature surfaces. In this presentation, I will show you how to generalize these conditions to supersymmetric fields. The work has been done for the case  $CP^{N-1}$  but little is known for other Grassmannian manifolds fields. Starting with Lagrange equations, I will construct the extended solutions and prove that they have constant curvature. In some cases, we can prove that these are the only constant curvature solutions that exists.