

ATELIER SUR « LES REPÈRES MOBILES EN GÉOMÉTRIE »
13–17 JUIN 2011

WORKSHOP ON “MOVING FRAMES IN GEOMETRY”
JUNE 13–17, 2011

Small(er) is beautiful : twistor space constructions in submanifold geometry

Thomas A. Ivey*
iveyt@cofc.edu

The study of minimal surfaces experienced a Renaissance in the 1980s, with the construction of new examples via innovative uses of the classical Weierstrass representation, enhanced by computer graphics. But, when we study a new class of submanifolds, how do we look for possible analogues to the Weierstrass representation—i.e., ways to construct solutions via holomorphic data, or more generally via solutions to a smaller and simpler exterior differential system?

In this talk, I will discuss several systems arising from submanifold problems, in which integrable subsystems can be identified “living on” smaller-dimensional twistor spaces, which are often globally defined. Examples will include flat surfaces in the sphere, Hopf hypersurfaces and austere 4-folds.

*Department of Mathematics, College of Charleston, Charleston, SC 29424, USA.