POLITECNICO DI TORINO

DISMA Dipartimento di Scienze Matematiche G. L. Lagrange

ECCELLENZA 2018 • 2022

Tuesday January 14, 2020 at 14:30
Politecnico di Torino, DISMA, Aula Buzano (third floor)

Fran BURSTALL

Professor at University of Bath

Discrete omega surfaces

Prof. Emilio Musso introduces the seminar.

Abstract

Omega surfaces, discovered by Demoulin in 1911, comprise a rich class of surfaces of classical interest, including linear Weingarten surfaces, isothermic and Guichard surfaces. They are an integrable system with a duality, Darboux transforms and a spectral deformation all of which can be traced back to their relation with isothermic surfaces in the Lie quadric. In this talk I shall sketch a satisfying discretization of this theory which retains all the details of the classical story. Along the way, we will present a novel reformulation (and mild generalization) of the Bobenko-Pinkall theory of isothermic nets.

Biography

Professor Francis Burstall received his PhD from the University of Warwick in 1984, with the dissertation title "Nonlinear Functional Analysis and Harmonic Maps". In 2003 he became a full professor at the University of Bath. His primary research concerns geometric approaches to the study of non-linear equations in differential geometry and theoretical physics. He has worked extensively on twistorial and soliton theoretic methods for harmonic maps, isothermic surfaces and related problems in both Riemannian and parabolic geometries. He has recently been working on the discrete theories of certain integrable classes of surfaces including isothermic surfaces and Omega surfaces.