FIM Minicourse

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The classification of minimal annuli in S^2xR and CMC tori in S^3 via integrable system

08 - 17 November 2016

Tue	08 November	15:45 - 16:45
Thu	10 November	13:15 - 15:00
Thu	17 November	13:15 - 15:00

HG G 43, ETH Zürich, Rämistrasse 101

Abstract

N. Hitchin introduced in 87 an algebraic correspondence between doubly-periodic harmonic map in S^2 or S^3 (the three dimensional sphere) with hyperelliptic Riemann surfaces S, called spectral curves. The period problem depends on the existence of an Abelian differential dh with prescribed poles on S. I will describe the construction of (S, dh) related to CMC annuli immersed in S^3 and minimal annuli in S^2xR. We will study the differential structure on the space moduli of these surfaces induced by this representation. We describe how to navigate in the space of Alexandrov embedded surfaces by deformation of (S, dh). A global study of this algebraic representation give a complete classification of embedded CMC tori in S^3 via integrable system. Similar considerations will characterize a two-parameter family of annuli foliated by constant curvature curves in S^2xR as the unique properly embedded minimal annuli.

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