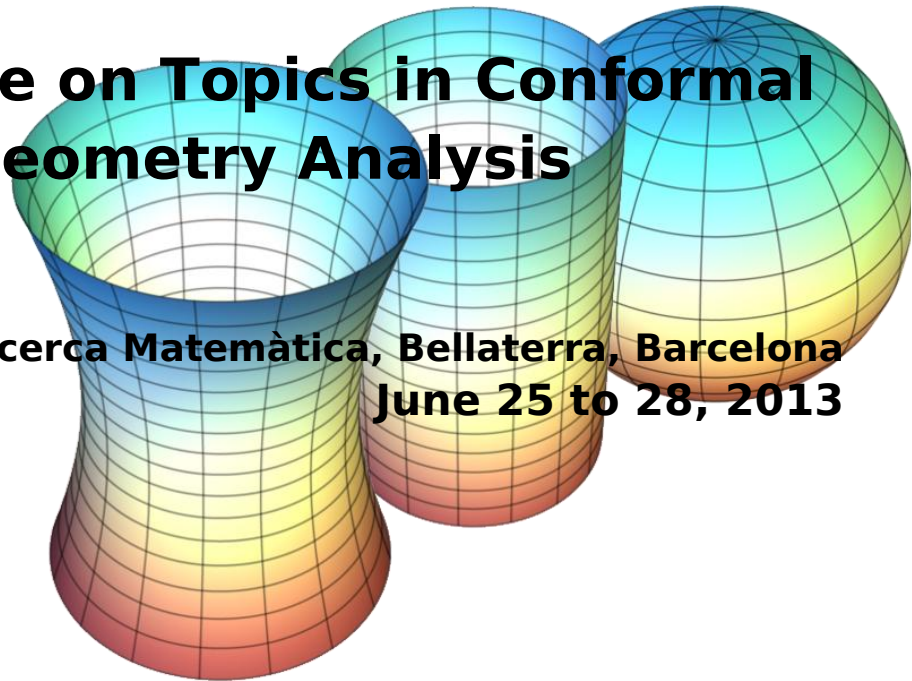


Advanced Course on Topics in Conformal Geometry and Geometry Analysis

Centre de Recerca Matemàtica, Bellaterra, Barcelona
June 25 to 28, 2013



Speakers

William Meeks (University of Massachusetts at Amherst)

Title: *Global Theory of Minimal Surfaces*

Abstract: My course will cover much of the basic classical theory of minimal surfaces in \mathbb{R}^3 both in the compact and in the complete setting. I will try to cover most of the results and theory from the survey article with Joaquin Perez titled *The classical theory of minimal surfaces* that appeared in volume 48 of the Bulletin of the AMS in 2011. At the end of the course I will cover some of the outstanding open problems in this subject and/or possibly cover some generalizations to the study of minimal surfaces in Riemannian 3-manifolds and to the closely related study of non-zero constant mean curvature surfaces in \mathbb{R}^3 .

Alice Chang (Princeton University)

Title: *Q-curvature and applications to problems in conformal geometry*

Abstract: In this mini-course we will start with definitions and cover some applications of the notion of Q-curvature to problems in conformal geometry. Topics include: GJMS operator, Branson's Q-curvature, prescribing Q-curvature problem, relation to symmetric functions of Schouten tensor, conformal sphere theorem, renormalized volume, fractional Q-curvature and compactness problems on conformal compact Einstein manifolds.

Charles Fefferman (Princeton University)

Title: *Local Conformal Invariants*

Abstract: This minicourse defines the ambient metric, GJMS operators and Q curvature, and sketches proofs of their basic properties, including the recent remarkable formulas of A. Juhl.



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