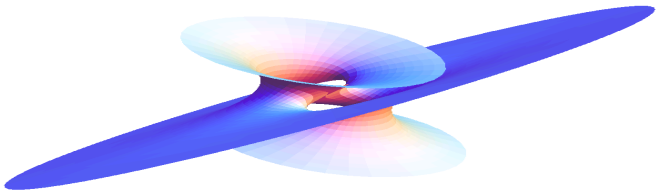
The seminar on Differential Geometry

March 25-27, 2018 | Niji-Matsubara Hotel, Karatsu, Japan

Supported by Grant-in-Aid for Scientific Research from JSPS



Invited Speakers

Cheng Qing-Ming (Fukuoka University)

Ding Qing (Fudan University)

Feng Huitao (Nankai University)

Fu Jixiang (Fudan University)

Tang Zizhou (Nankai University)

Zhang Weiping (Nankai University)

Organizing Committee: Cheng Qing-Ming (Fukuoka University)

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Program

March 25

Chair Tang Zizhou (Nankai University)

17:00 -- 18:00

Feng Huitao (Nankai University)

Geodesic-Einstein metrics and Stability I

18:10 --20:20
Dinner time

20:30 -- 21:30
Discussion on Differential Geometry

March 26

Chair Cheng Qing-Ming (Fukuoka University)

08：50 --09：50

Tang Zizhou (Nankai University)

Minimizing cone via isoparametric foliation I

10：10 -- 11：10

Ding Qing (Fudan University)

Vortex Filament on Symmetric Lie Algebras and Generalized
Bi-Schrodinger Flows I

11:20 -- 12:20

Fu Jixiang (Fudan University)

Limiting behavior of a class of Hermitian Yang-Mills metrics I

Lunch time

Chair Ding Qing (Fudan University)

14:00 -- 15:00

Cheng Qing-Ming (Fukuoka University)

Complete Lagrangian self-shribkers of mean curvature flow

15:20 -- 16:20

Zhang Weiping (Nankai University)

Positive scalar curvature and the Euler class I

16:40 -- 17:40

Feng Huitao (Nankai University)

Geodesic-Einstein metrics and Stability II

18:00 --20:20
Dinner time

20:30 -- 21:30
Discussion on special topics

March 27

Chair Cheng Qing-Ming (Fukuoka University)

08：30 --09：30

Fu Jixiang (Fudan University)

Limiting behavior of a class of Hermitian Yang-Mills metrics II

09：40 -- 10：40

Zhang Weiping (Nankai University)

Positive scalar curvature and the Euler class II

11:00 -- 12:00
Tang Zizhou (Nankai University)
Minimizing cone via isoparametric foliation II

Lunch time

Chair Zhang Weiping (Nankai University)

13:00 -- 14:00

Ding Qing (Fudan University)

Vortex Filament on Symmetric Lie Algebras and Generalized
Bi-Schrodinger Flows II

The seminar on Differential Geometry

Abstracts

Complete Lagrangian self-shrinkers of mean curvature flow

Cheng Qing-Ming (Fukuoka University)

In this talk, we consider complete self-shrinkers of mean curvature flow in Euclidean spaces. We classify 2-dimensional complete Lagrangian self-shrinkers with constant length of the second fundamental form in the 4-dimensional Euclidean space.

Vortex Filament on Symmetric Lie Algebras and Generalized Bi-Schrodinger Flows

Ding Qing (Fudan University)

Abstract: In this talk, we display an evolving model on symmetric Lie algebras from a purely geometric way by using the Hamiltonian (or para-Hamiltonian) gradient flow of a fourth order functional called generalized bi-Schrodinger flows. The theory of vortex filament in R^3 or $R^{(2,1)}$ up to the third-order approximation is shown to be generalized to symmetric Lie algebras in a unified way.

Geodesic-Einstein metrics and Stability

Feng Huitao (Nankai University)

Abstract: In this talk, I will introduce a joint work with Kefeng Liu and Xueyuan Wan on geodesic-Einstein metrics and stabilities. More precisely, we introduce notions of nonlinear stabilities for a relative ample line bundle over a holomorphic fibration and define the notion of a geodesic-Einstein metric on this line bundle, which generalizes the classical stabilities and Hermitian-Einstein metrics of holomorphic vector bundles. And then we introduce a Donaldson type functional to show that this functional attains its absolute minimum at geodesic-Einstein metrics, and we also discuss the relationships between the existence of geodesic-Einstein metrics and the nonlinear stabilities of the line bundle.

Limiting behavior of a class of Hermitian Yang-Mills metrics

Fu Jixiang (Fudan University)

Abstract : This talk concerns Hermtian Yang-Mills connections on a class of rank 2 holomorphic vector bundles over the product $X=B\times T$ of two copies of the complex one torus. The vector bundles are stables with respect to a family of Kahler metrics which are flat and have areas ε and ε^{-1} on T and B, respectively. We will study the asymptotics of the resulting Hermitian Yang-Mills metrics $H_{-1,\varepsilon}$ by constructing a family of Hermitian metrics $H_{-1,\varepsilon}$ and doing the C^k-estimates to $(H_{-1,\varepsilon})^{-1}H_{-1,\varepsilon}$-I. In this talk we will focus on the C^0-estimate.

Minimizing cone via isoparametric foliation

Tang Zizhou (Nankai University)

Abstract: We talk about cones associated with isoparametric foliations in unit spheres. In particular, infinitely many new minimizing cones were constructed. They are cones over focal submanifolds of isoparametric foliations. This is a joint work with Y.S. Zhang.

Positive scalar curvature and the Euler class

Zhang Weiping (Nankai University)

Abstract: we talk about a recent joint work with Jianqing Yu, which generalizes the classical Lichnerowicz vanishing theorem to the case involving the Euler class of a flat vector bundle.