

# Shuqiang Zhu

## Current Academic Affiliation:

School of Mathematics  
Southwestern University of Finance and Economics  
Chengdu, Sichuan, China

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## Education

### University of Victoria

Victoria, BC

Ph.D., Applied Mathematics, Sept 2013-July 2017

under the supervision of Florin Diacu

### Sichuan University

Chengdu, China

M.A., Mathematics and Applied Mathematics, June 2013

under the supervision of Shiqing Zhang

### Sichuan University

Chengdu, China

B.S., Mathematics and Applied Mathematics, June 2010

## Academic Positions

### Southwestern University of Finance and Economics

Chengdu, Sichuan, China

Associate Professor, Sept 2020-

### University of Science and Technology of China

Hefei, Anhui, China

Assistant Professor, Sept 2017- Augu 2020

## Visiting

### Instituto Tecnológico Autónomo de México

Mexico City, Mexico

March 2019-June 2020

advisor: Ernesto Pérez-Chavela

## Awards and Honors

David & Geoffrey Fox Graduate Fellowships, University of Victoria, 2015.

## Grants

National Natural Science Foundation of China, No. 11801537, 2019-2021

China Scholarship Council, No. [2018]10038, 2019-2020

## Current Research Interests

I possess a wide range of interests, but for now, my research is centred around: Central configurations of the N-body problem, including that in the Euclidean space and space of constant curvature; Expansive motions in the Newtonian N-body problem; N-vortex problem on sphere; Periodic motions for N-body problem in space of constant curvature.

## Selected Publications

1. **Shuqiang Zhu**, Eulerian relative equilibria of the curved 3-body problems in  $S^2$ , Proc. Amer. Math. Soc. 142 (2014), no. 8, 2837-2848.
2. Florin Diacu, Cristina Stoica, **Shuqiang Zhu**, Central configurations of the curved  $n$ -body problem, J. Nonlinear Sci., 28 (2018), no. 5, 1999-2046.
3. Yanxia Deng, Florin Diacu, **Shuqiang Zhu**, Variational property of Keplerian orbits by Maslov-type index, J. Differential Equations 267 (2019), no. 10, 5851-5869.
4. Florin Diacu, **Shuqiang Zhu**, Almost all 3-body relative equilibria are inclined, Discrete Contin. Dyn. Syst. Ser. S. 13 (2020), no. 4, 1131-1143.
5. Xiang Yu, **Shuqiang Zhu**, Classification of  $(n+1, 1)$ -stacked central configurations in  $\mathbb{R}^3$ , J. Nonlinear Sci. 31(2021), no.1, 1-21.
6. **Shuqiang Zhu**, Compactness and index of ordinary central configurations for the curved  $N$ -body problem, Regul. Chaotic Dyn. 26(2021), no.3, 236257.
7. **Shuqiang Zhu**, Dziobek equilibrium configurations on a sphere. J. Dyn. Diff. Equat.. 34(2022), no.2, 1269-1283.
8. Antonio Hernández-Garduño, Ernesto Pérez-Chavela, **Shuqiang Zhu**, Stability of regular polygonal relative equilibria on  $S^2$ , J. Nonlinear Sci. 32(2022), no.5.
9. Zhengyang Tang, **Shuqiang Zhu**, Perturbing masses: A study of centered co-circular central configurations in power-law  $n$ -body problems, Physica D, 461(2024).
10. **Shuqiang Zhu**, The Schubart Orbits in the Curved Three-Body Problem with Two Equal Masses, Journal of Nonlinear Science, 34(2024).

## Presentations

“Central configurations of the curved  $N$ -body problem,” 12th Annual PIMS Young Researchers Conference in Mathematics and Statistics, University of Calgary, Calgary, Canada, May, 2015.

“Stability of fixed points and associated relative equilibria of the 3-body problem on  $S^1$  and  $S^2$ ,” Applied Math Seminar talk at University of Victoria, Victoria, Canada, September, 2016.

“On Dziobek special central configurations,” 14th Annual PIMS Young Researchers Conference in Mathematics and Statistics, University of Saskatchewan, Saskatchewan, Canada, June, 2017.

“Central configurations and inclined relative equilibria on  $S^2$ ,” Workshop on the  $N$ -body problem and other related problems, Guangzhou University, Guangzhou, China, April, 2018.

“Index and compactness of central configurations for the curved  $n$ -body problem,” The Vth AMMCS 2019 International Conference, Wilfrid Laurier University, Waterloo, Canada, August, 2019.

“Relative equilibrium configurations of the curved  $n$ -body problem,” Applied Math Seminar at Instituto Tecnológico Autónomo de México, México city, México, September, 2019.

“Stability of regular polygonal relative equilibrium on  $S^2$ ,” Celestial Mechanics and Beyond (In honor of Professor Don Saari, on the occasion of his 80th birthday), Hotel NH-Puebla Centro Histórico, Puebla, México, March, 2020.

“On the finiteness of four-body central configurations,” Conference on Nonlinear Analysis and Application, Chongqing, China, December, 2022.

## Teachings

University of Victoria

2016, Fall                      Introduction to Calculus

University of Science and Technology of China

2018, Spring                  Linear Algebra

Instituto Tecnológico Autónomo de México

2019, Summer                Differential and Integral Calculus III

2019, Fall                      Calculus III

Southwestern University of Finance and Economics

2021, Spring                  Real Analysis, Real and Complex Analysis

2021, Fall                      Calculus I, Ordinary Differential Equations

2022, Spring                  Real and Complex Analysis

2022, Fall                      Ordinary Differential Equations

2023, Spring                  Real Analysis, Real and Complex Analysis

2023, Fall                      Calculus I

2024, Spring                  Calculus II, Real Analysis

2024, Spring                  Calculus II, N-body Problem

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