

# SUN CHUMIN

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## EDUCATION

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**Beijing Normal University (BNU)** Beijing, China

*Bachelor of Science* 2011.9-2015.7

- **Major:** Physics
- **GPA:** 87.0     **Major ranking:** 5/78     **Grade ranking:** 5/119, 10/117, 4/121 from freshman to junior
- **Awards:**
  - First-Prize Scholarship (top 5%) 2012,2014
  - Outstanding Student Leader (top 1%) 2013
  - First-Prize Competition Scholarship 2014
  - Third-Prize Academic Scholarship 2014
  - Merit Student (top 8%) 2014
- **Extracurricular:**
  - Minister, Department of Physics Student Union Equity Division 2012.6-2013.6
  - Deputy Editor-in-chief, Department of Physics Publication <Quest> 2012.6-2013.6
  - Vice-captain, Summer social practice team of Fuzhou, Fujian 2013.8

## RESEARCH

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**National Students' Innovation and Entrepreneurship Training Program** Beijing, China

*Spatiotemporal chaos and confidential communications in optical feedback system* 2012.5-2014.5

Core member (Instructor: Associate Prof. Li Xiaowen)

- Changed chaotic secure communication from the traditional electrical system to a large-capacity and high-speed optical system based on liquid crystal spatial light modulator
- Designed an feedback system by MATLAB for simulations, an optical feedback system by LabVIEW for experiments
- **Achievements:**
  - 2×1<sup>st</sup>-author paper published, 2×1<sup>st</sup>-author paper accepted
  - Attended “the 2nd China National Conference on Statistical Physics and Complex Systems and the 7th Cross-Strait Conference on Statistical Physics” to give a poster report

**“Jingshi Cup” Extracurricular Scientific Work Program** Beijing, China

*A quantitative method to express the thermal shrinkage of rubber band* 2013.1-2013.4

Core member (Instructor: Associate Prof. Xiong Gang)

- Designed an experiment that could verify the relationship between the rubber band entropy force and temperature, the length of the rubber band, the energy, and the rate of contribution
- Manufactured a rubber band heat engine in front of a heat source
- **Achievements:**
  - 1<sup>st</sup>-author paper published

## PUBLICATIONS

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- MA-Yuhan, HUANG-Lanqing, **SUN-Chumin**. "An Experimental System of Coupled Map Lattices". *Frontiers of Physics*. (2015). (in press)
- **SUN-Chumin**, HUANG-Lanqing, MA-Yuhan. "a Numerical Experiment of Secure Communication in Spatiotemporal

Chaotic on the computer". *Journal of Beijing Normal University (Natural Science)*. (2015). (in press)

- **SUN Chumin**. "Quantitative characterization of thermal shrinkage of rubber band". *Physics Experimentation*. 6(2014):7-11.
- **SUN Chumin**. "Design and application of chaotic synchronization and secure communication of the system output control". *Network Security Technology & Application*. 4(2014):37-38.
- MA-Yuhan, HUANG-Lanqing, **SUN-Chumin**. "Numerical Simulation of Spatiotemporal Chaos and Confidential Communications in Optical Feedback System". *The 2nd China National Conference on Statistical Physics and Complex Systems and the 7th Cross-Strait Conference on Statistical Physics*. (2013).

## **HONORS**

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- **Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM)** Beijing, China
  - **National First Prize (1%)** 2013.11
  - Problem B: The restoration of the splicing scrap paper
  - Built a math model to determine some special columns and rows, then search and splice the remaining shredded paper, and ultimately achieve the original page
- **Mathematical Contest In Modeling(MCM)** Beijing, China
  - **Honorable Mention** 2014.4
  - Problem B: College Coaching Legends
  - Built four math models (W-L Model, Group Decision-Making Model, Analytic Hierarchy Process Model and Factor Analysis Model) to select the best coaches among various sports.
- **The 5th Undergraduate Physical Experiment Competition of Beijing** Beijing, China
  - **Second Prize** 2013.1
  - Studied the quantitative characterization of thermal shrinkage of rubber band
- **The 6th Undergraduate Physical Experiment Competition of Beijing** Beijing, China
  - **Third Prize** 2013.11
  - Studied a numerical experiment of secure communication in spatiotemporal chaotic on the computer

## **VOLUNTEER EXPERIENCES**

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- **The 3rd China Undergraduate Physicists Tournament (CUPT)** 2012.8
  - Took charge of statistics and computer technology
  - Ranked participating schools record
- **The 9th China (Beijing) International Garden Expo** 2013.5-2013.11
  - Provided guidance services for tourists in the Beijing Garden Expo
- **THIRST FOR WATER** 2013.11
  - Organized more than 2000 students to form a huge water dragon, wakening people's awareness of water conservation
  - Broke the Guinness World Record
- **The Beijing International Spring Long Walk** 2013.5
  - Formed a volunteers' phalanx, leading the tourists to complete a 15-kilometer walk

## **SKILLS**

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- **Language:** CET-4 (517), CET-6 (487)
- **Certificate:** National Computer Rank Examination (Second Grade for C language programing)
- **Software:** Proficient in MATLAB, C/C++, Pascal, LaTeX, LabVIEW, and frequent user of Fortran, R, VB