

Information on Doctoral Thesis of Fellows Ta Cong Son

1. Full name: Ta Cong Son
2. Sex: Male
3. Date of birth: December 2nd, 1982
4. Place of birth: Thanh Hoa
5. Admission decision number: No. 2048/QĐ-SĐH , dated September 7th, 2010 of President of Vietnam National University, Hanoi
6. Changes in academic process: No
7. Official thesis title: The limit theorems for Martingale.
8. Major: Probability theory and mathematical statistics.
9. Code: 62460106.
10. Supervisors: Prof. Dr. Sc Dang Hung Thang.
11. Summary of the new findings of the thesis.
 - Establish Kolmogorov strong laws and Marcinkiewicz-Zygmund strong laws for block wise- α -martingale difference fields, Brunk-Prokhorov strong laws for martingale difference fields taking values in p -smoothable Banach, extend weak laws of large numbers for strong- α -adapted random fields.
 - Establish some new results of the complete convergence, the complete convergence in mean and its applications to strong laws of large numbers for random fields, establish the rate of convergence in strong law of large. More over, we provide conditions for the rate of convergence of random series of random fields elements taking values in p -smoothable Banach space.
 - Establish condition for convergence of sequences of random bounded operators, extended random operators. Defined of product of independent random operators. establish condition the condition for the existence of such a infinite product.
12. Paratical applicability, if any: the thesis adds some results of limit theorems for fields of random elements taking values in Banach spaces.
13. Further research directions, if any
 - Serearch law of large numbers for random elements sequences taking values in Hilbert spaces.
 - Serearch the central limit theorems for fields of random elements taking values in Banach spaces.
 - Serearch the limit theorems for random operators taking values in Banach space.
14. Thesis-related publications:
 1. Ta Cong Son, Dang Hung Thang (2013), "The Brunk-Prokhorov strong law of large numbers for fields of martingale differences taking values in a Banach space". *Statistics and Probability letters*, **83**, 1901-1910.
 2. Ta Cong Son, Dang Hung Thang (2013) "On the convergence of series of martingale differences with multidimensional indices", *submitted to Acta mathematica sinica english series*.
 3. Ta Cong Son, Dang Hung Thang, Le Van Dung (2012), "Rate of complete convergence for maximums of moving average sums of martingale difference fields in Banach spaces", *Statistics and Probability letters* **82**(4), 1978-1985.
 4. Ta Cong Son, Dang Hung Thang, Le Van Dung (2012), "Complete convergence in mean for double arrays of random variables with values in Banach spaces", *Applications of Mathematics* **59**(2), 177-190.
 5. Ta Cong Son, Dang Hung Thang, Phan Viet Thu. (2013), "Weak laws of large numbers for fields of random variables in Banach spaces", *Journal of Probability and Statistical Science*, Accepted.

6. Ta Cong Son, Dang Hung Thang, Nguyen Duy Tien (2012), "On the strong law of large numbers for block-wise($\alpha; \beta$)-martingale difference arrays in p -uniformly smooth Banach spaces", *submitted to Georgian Mathematical Journal*.
7. Dang Hung Thang, Ta Cong Son, Tran Manh Cuong (2014) "Inequalities for sums of adapted random fields in Banach spaces and their application to strong law of large numbers" *Journal of Inequalities and Applications* **446** (1) 1-14.
8. Dang Hung Thang, Ta Cong Son (2013) "On the convergence of the product of independent random operators", *submitted to International Journal of Mathematics*
9. Dang Hung Thang, Ta Cong Son (2013) "Convergence for martingale sequences of random bounded operators" Preprint.