Information on Doctoral thesis of Fellows Tran Tuan Ngoc

Official thesis title: The application of RADAR imagery for above ground forest biomass estimation in Hoa Binh province.

1. Full name: **Tran Tuan Ngoc**

2. Sex: Male

3. Date of birth: 04 April 1967

4. Place of birth: Hung Yen-Vietnam

5. Admission decision number: Decision No. 1691/QĐ- SĐH dated 07th May 2009 of the President of Vietnam National University, Hanoi.

6. Changes in academic process: Decision No. 1382/QĐ- SĐH dated 28th April 2011 of the Rector of VNU University of Science about the change of the thesis.

7. Official thesis title: The application of RADAR imagery for above ground forest biomass estimation in Hoa Binh province.

8. Major: Mapping, remote sensing and GIS

9. Code: 62440214

10. Supervisors:

First supervisor: ASSOC. PROF. Pham Van Cu, VNU University of Science.

Second supervisor: ASSOC. PROF. Nguyen Ngoc Thach, VNU University of Science.

11. Summary of the new findings of the thesis

- Optimization of RADAR HH and HV polarization combination for above ground biomass estimation. Combination of radar data with different look angles for bester forest above ground biomass estimation results. Estimation the saturation of radar backscattering with forest above ground biomass;

- The result of forest above ground biomass estimation for specific forest type in Hoa Binh province, the evergreen broad leaved forests on limestone.

13. Further research directions, if any

- This research focus on study the forest above ground biomass estimation using SAR data for the specific forest type in Hoa Binh, the evergreen broad leaved forests on limestone, whereas, in term

of forest ecosystem, there are eight main forest ecosystems in Vietnam. Thus, to apply this method for all forest ecosystem, the further study is needed.

- The biggest limitation of the method using SAR data for forest above ground estimation is the saturation of SAR backscattering with the high productivity forest, thus, the supplement method for biomass estimation should be introduce to fill the gap, that this method is inapplicable.

14. Thesis-related publications:

- Tran Tuan Ngoc, Nguyen Thanh Nga (2014), Application of radar remote sensing for above ground forest biomass estimation, *Journal of Geodesy and Cartography,* pp. 51-57.

- Tran Tuan Ngoc, Pham Van Cu, Nguyen Ngoc Thach (2012), Application of radar satellite Imagery for aboveground biomass estimation of forest cover in Vietnam - A Case study in Hoa Binh Province. *VNU Journal of Science, Natural Science and Technology,* pp. 75-82.

- Thuy Le Toan, Tran Tuan Ngoc, Nguyen Thanh Nga, Lam Dao Nguyen, Ludovic Villard, Alexandre Bouvet, Ake Rosenqvist (2011), Forest biomass assessment in Vietnam using ALOS/PALSAR, *The ALOS Kyoto and Science Team Initiative, K&C Science Report – Phase 2,* pp. 75-81.

- Le Quang Toan, Tran Tuan Ngoc, Pham Van Cu (2011), Application of SAR imagery for mangrove forest biomass estimation in the Namdinh coastal zone, *Conference on wetland and climate change,* pp. 465 – 471.