

**DOCTORAL THESIS INFORMATION WITH NEW SCIENTIFIC
CONTRIBUTION, THEORETICAL STUDY**

**1. Dissertation title: INTRASEASONAL VARIABILITY OF METEOROLOGICAL,
OCEANIC ELEMENTS IN WESTERN BIEN DONG**

Code: 62440227

Specialization: Oceanography

2. PhD Candidate: Le Quoc Huy

Advisors:

- Prof. Dr. Tran Thuc
- Prof. Dr. Dinh Van Uu

Institution: Viet Nam Institute of Meteorology, Hydrology, and Climate Change.

3. Introduction to the Dissertation:

The Thesis deals with intra-seasonal oscillations of some meteorological and oceanic data in the Western Bien Dong. Intra-seasonal oscillations is the median scale between the synoptic and seasonal scales. In recent years, intra-seasonal oscillation have received the attention of research in the world due to the availability and collectability of large scale, continuous and systematic ocean and atmospheric data. However, in Viet Nam research on this subject is still limited.

The Thesis uses the decomposition method (EEMD and MEEMD) method to filter the intra-seasonal components of wind and sea surface temperature from the measured data at the observation stations and re-analysis data. The results show that the 10-20-day and 30-60-day intra-seasonal oscillations have a direct effect and induce intra-seasonal variability in wind and sea surface temperature in the Western Bien Dong. Intra-seasonal variability in the study area is different in seasons (winter and summer) due to the varying trend of propagation of intra-seasonal oscillation in seasons. Furthermore, the results also show that ENSO phenomenon affects the intra-seasonal variability of wind and sea surface temperature in the study area.

4. New contributions of Dissertation:

- The Thesis has successfully applied the decomposition method (EEMD and MEEMD) for one-dimensional and two-dimensional hydro-meteorological data, unstationary and nonlinear data.

- Based on the analysis of measured data at the stations and the gridded reanalysis data in the study area, the Thesis assessed the presence and effect of

the large scale intra-seasonal oscillations to the intra-seasonal variability of sea surface temperature and wind in the Western Bien Dong area.

- The Thesis has assessed the relationship between ENSO and the intra-seasonal variability of wind and sea surface temperature in the Western Bien Dong.

Representative of Advisors

PhD Candidate



Prof. Dr. Tran Thuc



Prof. Dr. Dinh Van Uu



Le Quoc Huy