國立臺灣師範大學103學年度碩士班招生考試試題

科目：**專業英文(以科學相關期刊、論文閱讀翻譯為主)**　　適用系所：**地球科學系**

注意：1.本試題共 1 頁，請依序在答案卷上作答，並標明題號，不必抄題。2.答案必須寫在指定作答區內，否則不予計分。

英翻中（請將下列摘自期刊的段落翻譯為中文）

1. The North Equatorial Current (NEC) is a westward confluent current of the interior Sverdrup flows of the North Pacific subtropical and tropical gyres. After encountering the western boundary along the Philippine coast, the NEC bifurcates into the southward-flowing Mindanao Current (MC) and the northward-flowing Kuroshio. At the crossroads of the subtropical and tropical circulations, the bifurcating NEC provides important pathways for heat and water mass exchanges between the mid- and low-latitude North Pacific Ocean. Because the western Pacific warm pool with sea surface temperatures >28°C extends poleward of 17°N, the NEC's bifurcation and transport partitioning into the Kuroshio and MC are likely to affect the temporal evolution of the warm pool through lateral advection. In addition to its influence on physical conditions, changes in the NEC bifurcation are also important to the regional biological properties and fishery variability along the Philippine coast and in the western Pacific Ocean. (35 分)

2. Chlorophyll-dependent parameterizations of shortwave heating show that even in waters that are relatively clear much of this heating is blocked, so that waters below about 100m can be significantly cooled by the presence of ocean color. Isolating the effect of such solar heating changes in nature is difficult, as temporal variations in both temperature and chlorophyll are affected by mixing and advection. (15分)

3. The Luzon Strait is an important gap that connects the Philippine Sea with the South China Sea (SCS) and has a western boundary current called the Kuroshio. Earlier research suggests that the Kuroshio tends to leap the Luzon Strait without significant intrusion into the SCS in summer, whereas it sometimes flows into the SCS through its anticyclonic meandering in winter. East of the Luzon Strait is the western boundary of the North Pacific Subtropical Countercurrent; this region contains rich meso-scale eddies that are mainly caused by baroclinic instability. Because meso-scale eddies are westward propagating, these eddies will approach and impinge on the KC in the Luzon Strait region and result in the Kuroshio's variability. (25分)

4. 請用英文回答下列問題: (25分)

Global Change, one of the hottest topics in the nature sciences filed, please describe what you had experienced about the global change, and express your points of view to the global change (300 words limitation)