

International School on Atmosphere - Ionosphere Radars and Radio Sounding: Science and Applications

ISAR – NCU 15 - 24 November 2010

Graduate Institute of Space Science and
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(report by C.M. Huang and J. Röttger)

Since 2006 the National Central University (NCU) in Jhong-Li (Chung-Li), Taiwan, had conducted International Schools on Atmospheric Radar (ISAR). Due to the great demand, proved by the large number of international applications (there were more than 80 students applying to attend the school in 2009) and the great success, proved by examinations and responses of students, the fifth school ISAR-NCU-2010 was held in November 2010. It was mainly open for students from South-East Asia and all costs for students and lecturers were carried by the NCU.

This school was aiming to graduate and PhD students, young postdoctoral research scientists and engineers having background or work in the fields of atmospheric or ionospheric science, radar and radio system development and experimental applications. In particular methods applying different ground-based lower, middle and upper atmosphere and ionosphere radar and radio methods were addressed.

The ISAR-NCU-2010 was co-directed by Professors Chien-Ming Huang (Graduate Institute of Space Science, NCU, Taiwan) and Jürgen Röttger (Germany), supported by the university under President W.L. Chiang through Prof. Y.H. Chu, Director of the Dept. of Research and Development of NCU, which was the predominant sponsor of this school. The lecturers and presentations were held in the Center for Space and Remote Sensing Research (CSRSR) of the NCU.

Such as earlier schools ISAR-NCU-2010 was performed under the international heading of the SCOSTEP (Scientific Committee on Solar Terrestrial Physics) program CAWSES (Climate and Weather of the Sun-Earth System) and the URSI Working Group GF on Middle Atmosphere (International Union of Radio Science), co-chaired by C.H. Liu and J. Röttger.



The lectures were given by four professors from Taiwan and four foreign ones. They comprised the following topics: J. Röttger (Germany) on basics of radars for scientific research – an overview of atmosphere and ionosphere radars; radar technology, radar control, data acquisition and pre-processing, MST-VHF radars; coherent and incoherent scatter radars; atmosphere dynamics and ST radar meteorology. Y.C. Liou (NCU) on the introduction of Doppler weather radars and their applications. T.C. Chen Wang (NCU) on the introduction of the principle and the applications of dual-polarization weather radar systems. R.M. Kuong (NCU) on the NCU VHF radar system. T.Y. Yu (USA) on atmospheric radar imaging using multi receivers and multi frequencies. K.K. Reddy (India) on wind profilers for atmospheric research, and natural disasters and implications on Asia. T. Bullett (USA) on HF radars and ionospheric sounding; and L.C. Tsai (NCU) on ionospheric electron density and total electron content measurements and modelling.



The 25 students, attending this international school, were from seven countries: India, Indonesia, Malaysia, Mongolia, Philippines, Vietnam, and Taiwan as well. They enjoyed also visits of the mobile and stationary Doppler dual-polarization radars and the VHF radar of the National Central University. Some special hours were dedicated to questions and answers and introduction to some hands-on data processing and initial interpretation. Each student received a certificate having attended the ISAR-NCU 2010. At the end some students had been invited to give short presentations on their own work, and in the final discussion session remarks were discussed how to continue and further improve future schools. The National Central University has given us very clear signals to support performing future schools. It is planned to hold the next ISAR-NCU in November 2011.