



investigation of atmosphere - ionosphere dynamical coupling. The rest of the session had contributed papers detailing the CAWSES-II related capacity building activities in Japan.

There were also Space Weather Science sessions on May 26 and 27, 2011 on all aspects of the Sun-Earth system from coronal mass ejections to their impact on

geospace. In addition, there was a session on Global Data systems that had talks on ICSU world data system (T. Watanabe, Y. Murayama), SPASE project (T. King), and WMO information system (E. Toyoda). T. Watanabe announced the organization of the first ICSU World Data System (WDS) Conference on "Global Data for Global Science" to be held during September 3 - 6, 2011 in Kyoto. The conference website is at <http://wds-kyoto-2011.org>.

### Highlights on Young Scientists

## New sodium lidar at Tromsø, Norway

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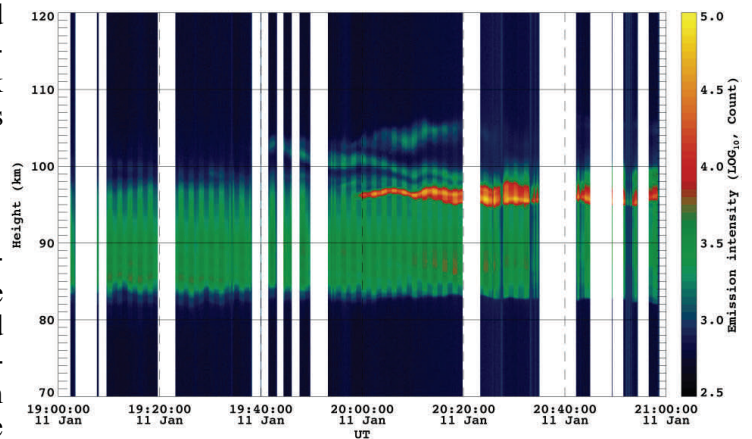
**Takuo Tsuda**

In 2009, as a postdoctoral fellow, I joined a new sodium temperature lidar project promoted by Nagoya Univ., when the fundamental specification of the lidar had been mostly determined. The lidar system consists of three parts: the pulsed sodium D2 laser by RIKEN; the high-speed frequency switchable seeder by Shinsyu Univ.; and the high-speed receiver by Nagoya Univ.. My main activity has been on supports for the development of the three parts and the integration of the whole system. Based on collaboration with Univ. of Tromsø, installation site of the lidar is the EISCAT radar Tromsø site, Norway (69.6°N, 19.2°E), which has a long tradition in investigating the polar upper and middle atmosphere as well as auroral phenomena using radars and optical instruments. There was a lack of neutral temperature observation at the Tromsø site, and this lack often limited our understanding on observed various phenomena.

In order to advance our knowledge on the coupling between the neutral atmosphere and the ionosphere greatly, it is essential to measure relevant neutral and ionospheric physical parameters simultaneously. Temperature observations by the new sodium lidar started in 2010 (Figure 1), and thus now is the time to have more comprehensive observations at the Tromsø site, which is one of the state-of-art observatories, with further collaborations between atmospheric and ionospheric researchers in this CAWSES-II project.



**Figure 1. First observation with the new sodium lidar.**



**Figure 2. Sporadic sodium layer observed in nighttime on 11 January 2011 above Tromsø. The new sodium lidar measurement with time resolution of 5-sec reveals short-period wave-like structure in the sporadic sodium layer. (Note: The emission intensity includes an artificial variation due to changing of the laser frequency at every 1-min, i.e. two frequency measurement for deriving temperature data.)**