

You can do it! Remote Sensing Analysis

PART I : How Easy to start Remote Sensing Analysis

(1) What is remote sensing analysis

Remote sensing is a technology to observe wide range of the earth under the same condition by a sensor of electromagnetic wave on satellites or air planes. By collecting ground information (crops, vegetation, soil, or temperature) on the spot and by analyzing the relation of the remote sensing data and measured reflectance, it is possible to estimate accurately the situation of an area where it is difficult to conduct direct field survey such as jungles, deserts, mountains, etc. Nowadays, remote sensing analysis is used in various fields; meteorology, geology, environmental research, and so on.

Then, what is the theory of remote sensing technology? Light radiated from the sun reaches materials on the earth and reflects. Simultaneously, materials on the earth radiate various electromagnetic waves including infrared rays. These electromagnetic waves are caught by sensors, and features of materials are analyzed from disposition and strength of the waves.

Research fields of remote sensing analysis :

- Agriculture: Crop yield estimation, Cultivated area, Soil classification
- Forestry: Classification of vegetation, Observation of fire, Control of disease and vermin
- Land: Present land use
- Disaster: Observion of volcano, Landslide survey
- Geology: Land surface survey, Structure Pattern of land, Geo-thermal survey
- Water: Snowing survey, Survey of surface water
- Environment: Environmental classification, Environmental pollution, Observation of urban environment
- Ocean: Distribution of water temperature, Current survey, Red tide survey
- Weather: Meteorological survey and forecast



(2) Isn't it costly ?

Everybody usually thinks that remote sensing analysis is costly because it requires expensive equipments and special soft ware for image analysis. However, it is possible to make the system cheaper than it is imagined. Our system uses less expensive equipment mentioned below;

- Computer: Macintosh LC630 (around US\$ 1,200)
- Soft Ware: Photoshop, MapII, others (provided by prof.Tsuchiya, Shizuoka University)

(3) Where can you get remote sensing data ?

You can buy satellite data, such as LANDSAT (TM, MSS), SPOT, JERS-1, and MOS-1 at RESTEC (Remote Sensing Technical Center) in Japan. They sell image data and numerical data in magnetic disks, tapes and CD-ROMs. Regions covered by each satellite are as follows;

Satellite	Data covered
LANDSAT (TM, MSS):	All over the world
SPOT:	All over the world
JERS-1:	Far East, South East Asia, Australia, Europe, North America
MOS-1:	Far East, South East Asia, Europe, North America