



## **TATSCAN-X1, non-destructive transparent X-ray 2-D imaging scanner of sediment/rock cores**

**T. Sakamoto** (1), K. Iijima (1), and S. Sugisaki (1, 2)

(1) Institute for Research on Earth Evolution (IFREE), Japan Agency for Marine-Earth Science and Technology (JAMSTEC) (tats-ron@jamstec.go.jp / Fax: +81-46-867-9775 / Phone: +81-46-867-9803), (2) Department of Polar Science, The Graduate University for Advanced Studies, c/o National Institute of Polar Research

Internal structure of sediment and rock is an end product of its forming processes such as sedimentation and lithification. Post-depositional internal structure such as fracture and fault is also important to understand post-depositional processes. We have been developing non-destructive transparent X-ray 2-D imaging scanner in order to reveal internal original structure of drilling and coring material. The “TATSCAN” is our code name of developing original instruments for non-destructive sediment scanning and imaging in range of millimeter and micrometer scale. In the recent, we have newly developed non-destructive transparent X-ray 2-D imaging color scanner of sediment/rock cores called as “TATSCAN-X1”. It originally measures an 2-D intensity of transparent X-ray through materials by using digital imaging intensifier X-ray camera. It is possible to scan the materials up to 1500 mm-long and 150mm-wide. Spatial resolution of X-Y stage is set up within 0.1  $\mu\text{m}$ . Conventional spatial resolution of digitized X-ray image will be  $<50\mu\text{m}$ . The stacked X-ray image will be constructed just after measurements by using macro program. Measurement of a 1500mm-long core will be taken within a few minutes. We are trying to get transparent images for sample from the outcrop, u-channels samples of sediment core, split half core, whole rounded core, corals, and so on. In this presentation, we present some examples of measurements of recovers cores from the ocean, lake, and land.