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On EarthCare Project
Ehrhard Raschke
Hamburg University

Uncertainty over the representation of clouds and aerosols is one of the main sources in error in predictions of future global warming. EarthCARE (Earth Clouds Aerosols and Radiation Explorer) is a proposed joint ESA-NASDA satellite mission currently, which intends to address the interaction and impact of clouds and aerosols on the Earth’s radiative budget.

A Study on Pneumatic Actuated Biped Robot
Manabu Kosaka
Department of Mechanical Engineering, Kinki University

Biped robots are expected to work and help us safely. The robots that have the size and the movement performance of a three years old baby are safe and useful. In order to make such a safety biped robot, pneumatic actuators are applied. The concept plan and the mechanism design are presented.

Visualization and Image Processing Techniques for Gas Transfer at Water Surfaces
Kohsei TAKEHARA
Department of Civil and Environmental Engineering, Kinki University

Gas transfer at the water surfaces is one of the most important factors for evaluation and prediction of the aquatics environment. The phenomena of gas transfer at water surfaces is strongly related to the water flow structures close to the surface. In the hydraulic laboratory in Kinki University, the visualization and image processing techniques have been developed for the measurements of the gas at water surfaces.

In this seminar, latest visualization and image processing techniques were introduced.

Determination of the Mining District for Red Pigments, Cinnabar, Collected from Old Burial Mounds Using the Newest Models of Analytical Instruments
Takeshi Minami
Department of Life Sciences, Kinki University

Red cosmetics were used to funeral ceremonies of burial mounds in all over Japan during Yayoi and Kofun periods. In addition, cinnabar was the most valuable red pigments in such periods. Therefore, it is of great interest to determine the original mines providing the cinnabar, as the period when cinnabar was used in burial mounds coincided with that when the dynasties of Yamataikoku and Yamato were built and extended its sphere of influence. The study showing here is a part of the major work which I have been studying trace elements in human, animals, and environments. Here, I would like to present recent study using the newest models of analytical instruments for the determination of the mining district of cinnabar.

Marvelous Achievements of Japanese Mathematics in the Edo Period
Hikosaburo Komatsu
Department of Mathematics, Tokyo University of Science