



556th ASRC Seminar

Date: 13:30 ~15:00, 13 June

Location: Meeting room 302, ASRC Building

Speaker: Dr. Haruo Miyadera

(Power and Industrial System R&D center,
TOSHIBA Corporation)

Title: Imaging Fukushima Daiichi reactors
with muons

On March 11, 2011, a 9.0-magnitude earthquake and vast tsunami caused human and economic catastrophes in eastern Japan. Among the infrastructure casualties was the Fukushima Daiichi nuclear power station; more than three years later, the reactor buildings remain almost inaccessible due to high radiation. Los Alamos National Laboratory and Toshiba have started a project to remotely image the damaged reactor cores by observing scatterings of cosmic-ray muons. Since muons are strongly scattered by uranium and other heavy elements, muon scattering imaging has high sensitivity for detecting uranium fuel and debris even through thick concrete walls and a reactor pressure vessel. The technique was demonstrated with Toshiba's research reactor in Kawasaki, where all the features of the reactor were observed with a spatial resolution of 3 cm after 4-weeks of measurement. Muon trackers were planned to be installed at Unit 2 of Fukushima Daiichi in the spring of 2015.



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