

**Measurement of Environmental Radiation on the Campuses
of the Hitotsubashi University (II)**
—Effect on Environmental Radiation of Construction of
the Lecture Building 2 on the Kunitachi East Campus—

Nozomu Ueda

Abstract

The environmental radiation has been measured with an ionization chamber survey meter and a gamma-ray spectrometer at 25 points on the Kunitachi East Campus and West Campus. The survey meter shows that the equivalent dose rates are $0.04\text{--}0.08\ \mu\text{Sv/h}$, that is, $0.4\text{--}0.7\ \text{mSv/y}$ at points remote from concrete structures on both the campuses. At points near the new buildings on the East Campus they are around $0.06\ \mu\text{Sv/h}$, significantly larger than the values before the construction. The equivalent dose rates are larger than $0.2\ \mu\text{Sv/h}$ at some points inside the new building for the general education, Lecture Building 2. The gamma-ray spectrometer is composed of a multichannel analyzer and an NaI scintillation detector, 2 inch in diameter and 2 inch in length cylindrical. Gamma-ray spectra obtained show that the main origins of the radiation are the radioactive nucleus K-40 and the daughter nuclei of Th-232 and U-238. Leakage of X-ray has been detected at points closed to the buses in which the X-ray diagnosis have been done for the staffs and students of the university. The gamma-ray spectra shows that the counts during the X-ray diagnosis are 10-30% higher than the usual values in an energy range of 50-270 keV.