S. Kato LAB.

[Control of air environment in sustainable society]

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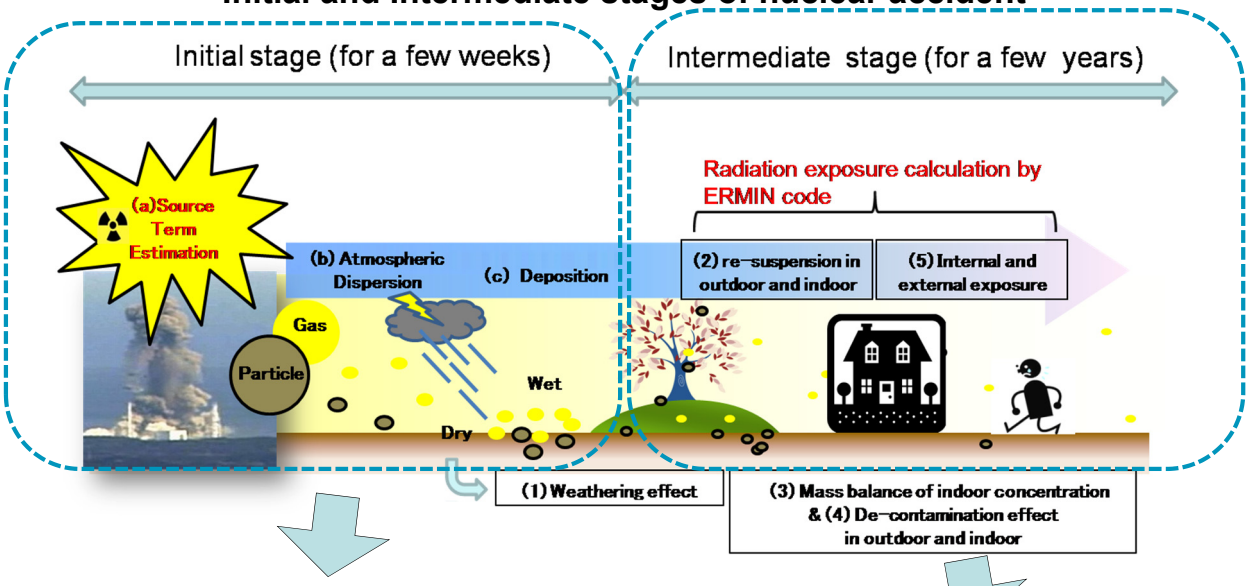
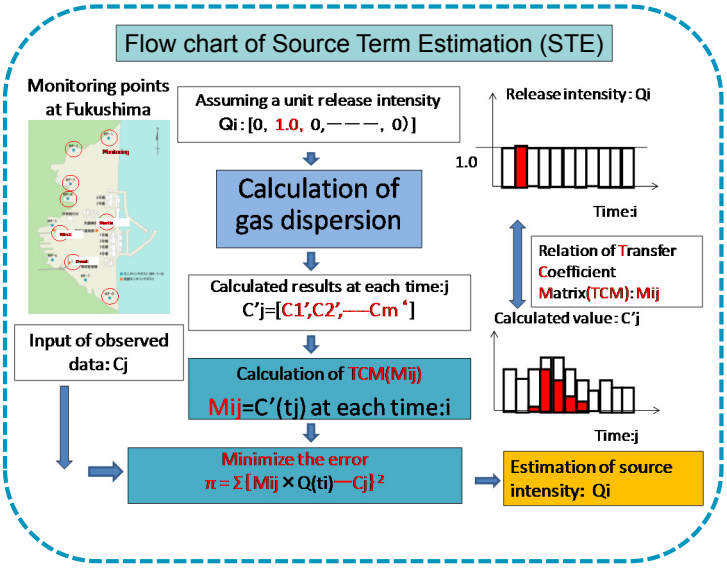
Engineering of architecture and urban environment

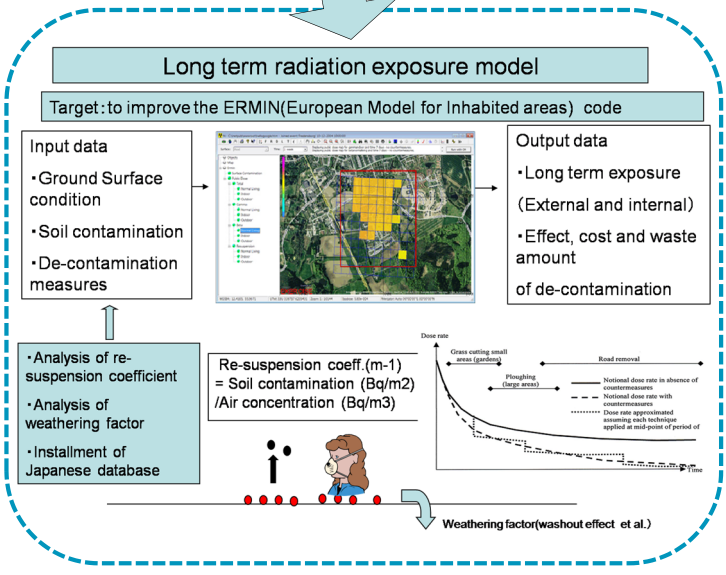
Department of architecture, Faculty of engineering

A Radiation Estimation Method for use in the Initial and Intermediate Stages of a Nuclear Accident

Initial and Intermediate stages of nuclear accident







The object of this study is to develop the operational Source Term Estimation (STE) method applicable with the nuclear accident like Fukushima Dai-ichi(1st) nuclear power plant in 2011. We developed the new STE method based on atmospheric dispersion models, and validated its accuracy with the wind tunnel data in Tokai Daini(2nd) nuclear power station in Japan.

The Fukushima Dai-ichi Nuclear Power Plant (FDNPP) accident led to the dispersion of radioactive material by wind that resulted in soil and air pollution over a wide area. We estimated radiation exposures for the 10 years following the accident, using ERMIN (EuRopean Model for INhabited areas) model developed by several European Organizations. We found a good agreement between the estimated results and the observed data at 1, 2 and 3 years after the nuclear accident.