

# Int. Management of Civil Infrastructure

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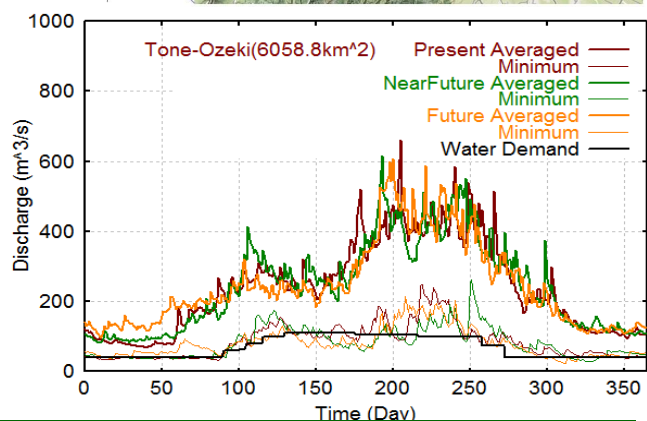
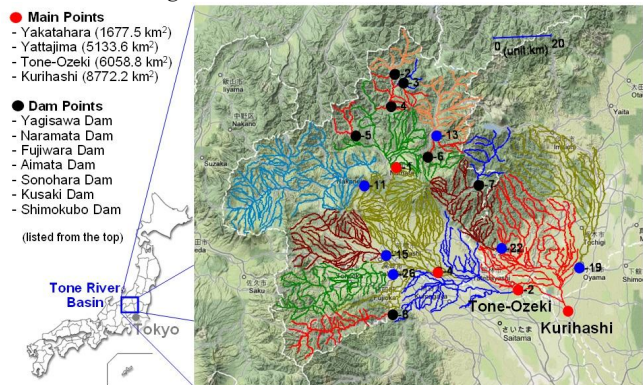
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## Climate Change Impact Analysis on Hydrologic System, And Health Monitoring of Bridge using Vehicle Vibrations

Researches in International Management of Civil Infrastructure Lab aim to answer questions related to designing and managing of civil infrastructure. The research topics in this interdisciplinary laboratory are composed of two subjects; climate change impact analysis on hydrologic system and health monitoring of bridge using traffic-induced vibrations.

### Climate Change Impacts on Water Resources and Flood Risk

Based on Global Climate Model (GCM) output for the future climate projection, changes in heavy rainfall frequency and water resources conditions are analyzed to solve and prevent any water related problems in major river basins (e.g. Tone River Basin).

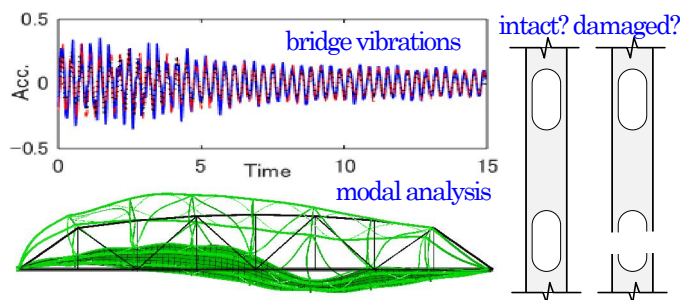


### Realtime Flood Forecasting with Weather Radar Observation

Weather radar observation data is utilized into a distributed hydrologic model for a short-term rainfall forecasting as well as flood forecasting, and non-structural countermeasures are investigated to decrease the floods risk.

### Bridge Modal Analysis & Damage Detection using Traffic-Induced Vibrations

Bridge damage detection has become an important research and engineering issue in facing the pressing problems of aging bridges. Our study focuses on detecting potential damage in short- and medium-span bridges using their daily traffic induced vibrations. Effective indicators are extensively investigated, including modal parameters, time-series coefficients, spectral functions and their derivatives.



### Vehicle-bridge Interaction & Its Applications

Vehicle-bridge interaction is the interaction behavior between a bridge structure and vehicles moving on the bridge, which is broadly considered in bridge engineering, seismic design, health monitoring, etc. Our study focuses on its mechanical interpretation and innovative application to bridge dynamic analysis, drive-by inspection, and more.

