

**Department of Structural Engineering
University of California, San Diego
SE 290 Seminar**



Professor Shuichi Fujikura
Department of Civil Engineering and Regional Design
Utsunomiya University

"Damage of Bridges in 2016 Kumamoto Earthquake"

Wednesday, March 14, 2018
12:00 pm - 12:50 pm, Pepper Canyon Hall, Room 122

<https://structures.ucsd.edu/seminars>

Abstract

The 2016 Kumamoto Earthquake occurred in central Kyushu, Japan, on April 14th with Mw 6.2 followed by the Mw 7.0 main-shock on April 16th. These earthquakes were mainly caused by the Futagawa fault and Hinagu fault where surface ruptures extended about 34 km long. The earthquakes killed 250 people and caused significant damage to buildings and infrastructure in Mashiki, Nishihara, and Minamiaso areas along these two faults. The field investigation of bridges was conducted in the earthquake-stricken areas; Kumamoto city and Mount Aso area. One of the important discoveries is the damage of relatively new bridges, designed by the bridge specifications after the 1995 Kobe earthquake in these areas. The Oginosaka Bridge is one of the bridges damaged located in Mount Aso area. This bridge is a three-span continuous horizontally curved bridge with composite steel I-girders and has a longitudinal and transverse grade which is typical for bridges located in a mountainous area. The superstructure was rotated on plan and displaced transversely at both abutments to the opposite side with about 200 mm residual displacement of laminated rubber bearings. Cracks were developed from the bottom of the abutment back-wall, which shows the deck-abutment pounding. Nonlinear time-

history analyses were carried out in order to verify the damage observed in the field survey.

Biography

Shuichi Fujikura is Associate Professor at the Department of Civil Engineering and Regional Design at Utsunomiya University. He is a registered civil engineer in the State of California. Shuichi Fujikura received a B.S. in Civil Engineering and an M.S. in Civil Engineering from Tokyo Institute of Technology, and holds a Ph.D. in Structural and Earthquake Engineering from the State University of New York at Buffalo. His research interests include seismic protective systems for bridges, seismic behavior of bridges, earthquake and blast resistant design of bridges.

<https://structures.ucsd.edu/seminars>

*Sponsored by Professor Gilberto Mosqueda
For more information on this seminar, contact Lindsay Walton,
at [858-822-3273](tel:858-822-3273) or lwalton@ucsd.edu*