# Seismic Vulnerability Assessment of Deteriorated Bridges: Data for UTC Region II Year 2 Ranade-Okumus Final Report Dataset
**Dataset available at:** https://doi.org/10.7910/DVN/BPEPAH

(This dataset supports report **Seismic Vulnerability Assessment of Deteriorated Bridges**)

This U.S. Department of Transportation-funded dataset is preserved by the Center for Advanced Infrastructure and Transportation (CAIT) in the CAIT Dataverse, which is a part of the Harvard Dataverse repository (https://dataverse.harvard.edu/), and is available at https://doi.org/10.7910/DVN/BPEPAH

The related final report **Seismic Vulnerability Assessment of Deteriorated Bridges**, is available from the National Transportation Library's Digital Repository at https://rosap.ntl.bts.gov/view/dot/60842.

**Metadata from the Harvard Dataverse Repository record:**
Dataset Persistent ID: doi:10.7910/DVN/BPEPAH
Publication Date: 2021-03-24
Title: Data for UTC Region II Year 2 Ranade-Okumus Final Report
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Description: The seismic vulnerability assessment methods currently used by state DOTs typically rely on as-built conditions of bridges. However, due to environmental deterioration, the structural performance can degrade over time. This research demonstrates the application of a combined durability-fragility assessment framework, developed by the authors, for a group of bridges in the states of New York and Washington. Corrosion of steel reinforcement is the main deterioration mechanism considered for durability evaluation. The computational framework demonstrated in this research consists of three parts: corrosion modeling, seismic fragility analysis, and risk analysis. The results show that all bridges become more vulnerable to seismicity due to corrosion deterioration. For a group of bridges, the order of vulnerability can change over time due to corrosion which affects the fragility each bridge differently depending on its layout, geometry, reinforcement detail, cover thicknesses, axial load ratio, salt exposure, etc. These results can be used to update the vulnerability scores of bridges and prioritize maintenance activities.
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**Dataset description:**
This dataset contains 1 .xlsx file, described below.

**Data for UTC Region II Year 2 Ranade-Okumus final report.xlsx:**
The .xlsx and .xls file types are Microsoft Excel files, which can be opened with Excel, and other free available software, such as OpenRefine.

**National Transportation Library (NTL) Curation Note:**
As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (https://ntl.bts.gov/public-access) Section 7.4.2 Data, the NTL staff has performed *NO* additional curation actions on this dataset. NTL staff last accessed this dataset at https://doi.org/10.7910/DVN/BPEPAH on 2022-04-11. If, in the future, you have trouble accessing this dataset at the host repository, please email NTLDataCurator@dot.gov describing your problem. NTL staff will do its best to assist you at that time.