

Ergo Training Manual (work in progress)

This is a Ergo Training Manual for the visiting students (Eujeong Choi and Jaebeom Lee) from S. Korea. This document can be a good starting base for the official manual.

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Hazard

Background

- See [Hazard Introduction](#) for links to hazard attenuation information

Hands on with Ergo

Built-in Attenuation functions on Ergo

How to create a scenario earthquake UI

Create Ergo Input Dataset (ESRI Arc/Info Grid ASC format) from USGS shakemap data (by using QGIS)

Download

- Download the data from USGS shakemap (<http://earthquake.usgs.gov/earthquakes/shakemap/>)
 - Select a region (or network)
 - Select download link
 - Download GIS Files - Shape Files (ESRI shapefile format)
- Unzip the downloaded file

Rasterize (vector to raster)

- Since the data from USGS site is in vector format (polygons), it needs to be converted to ASC format for Ergo Input
- Open the shapefile (pga.shp) in QGIS (we will create PGA raster data)
- Rasterize the vector data by the menu: Raster - Conversion - Rasterize
 - Input file: the shapefile for conversion
 - Attribute field: Value
 - Output file: select Geotiff and give a name (extension: tif)
 - Note: current version of QGIS rasterizer can't support ASC format directly
 - Raster size
 - default: 3000, 3000
 - You can increase the size to decrease the file size (but sacrifice the accuracy)

Geotiff to ASC

- Convert the format from Geotiff to ASC by the menu: Raster - Conversion - Translate
 - Input layer: the geotiff layer you created from previous step
 - Output file: select Arc/Info Grid Ascii (ASC) and give a name

Importing Raster data as a hazard

- Convert USGS vector to raster and import into Ergo, see [Importing ASCII Raster](#) guide
- Use the imported hazard in an Ergo damage analysis (e.g. building damage analysis).

Adding Attenuation Model

- Create a new plugin for the attenuation model, add dependencies
- Create a new extension and generate the class for the new model
- Add plug-in to Ergo launcher to make new model available

Fragility

Background

- Bridge Fragility
 - [Fragility Data overview](#)
 - [Fragility Mapping](#)
- Building Fragility
 - [Fragility Data overview](#)
 - [Fragility Mapping](#)
- Pipeline Fragility
 - Fragility Data overview (see Ergo Technical Manual)
 - Fragility Mapping (see Ergo Technical Manual)

Hands on with Ergo

Create and Import Fragilities and Mapping

- Create building fragility dataset
- Import building fragility dataset
- Create building fragility mapping
- Import building fragility mapping
- Visualize imported fragility in Ergo

New Analysis

Background

- [Analysis Framework Developers Guide](#)

Hands on with Ergo

Create New Analysis

- [Create a New Analysis](#)
 - Create plugin
 - Create new analysis
 - Create new analysis task
 - Create analysis result type

Inventory

Background

- Bridges
 - Data format overview
- Buildings
 - Data format overview
- Pipelines
 - Data format overview

