

## ABSTRAK

gempa bumi adalah peristiwa bergetar atau bergoncangnya bumi karena pergerakan atau pergeseran lapisan batuan pada kulit bumi secara tiba-tiba akibat pergerakan lempeng-lempeng tektonik. Gempa bumi yang disebabkan oleh aktivitas pergerakan lempeng tektonik dikenal dengan gempa bumi tektonik sedangkan gempa bumi yang terjadi akibat aktifitas gunung berapi disebut sebagai gempa bumi vulkanik. Penelitian ini mengenai metode kuantitatif dimana dilakukan pengumpulan data berupa gambar rencana pada gedung kebudayaan, nilai pembebanan berdasarkan Standar Nasional Indonesia (SNI), dan memperoleh data dari kantor Pekerjaan umum berupa data gambar detail bangunan berdasarkan izin permohonan untuk melakukan analisis struktur bangunan gedung kebudayaan Sumatera Barat. Menggambarkan bentuk bangunan dari hasil memperoleh gambar detail bangunan yang akan di input kedalam aplikasi seismostruct. Pengimputan gambar dilakukan berdasarkan ukuran yang telah di berikan sesuai dengan ukuran di lapangan. Memunculkan analisis dibutuhkan dengan metode pushover yang telah diterapkan. nilai dispersi permintaan sebesar 0,68, nilai median kapasitas sebesar: DS1 0,005, DS2 0,022, DS3 0,194, DS4 1,382, untuk ketentuan besaran koefisien variasi pada tiap-tiap damage state slight dan moderate 0,25 dan damage state extensive dan complete 0,5

Kata Kunci: PGA, *Seismostruct*, kurva fragilitas, *damage state*

## **ABSTRACT**

*An earthquake is an event where the earth vibrates or shakes due to the sudden movement or shift of the rock layers in the earth's crust due to the movement of tectonic plates. Earthquakes caused by the movement of tectonic plates are known as tectonic earthquakes, while earthquakes caused by volcanic activity are known as volcanic earthquakes. This research is about a quantitative method in which data is collected in the form of plans for cultural buildings, loading values based on Indonesian National Standards (SNI), and obtaining data from the Public Works office in the form of detailed building image data based on permit applications to carry out structural analysis of cultural buildings of West Sumatra. Describes the shape of the building from the results of obtaining detailed drawings of the building that will be input into the seismostruct application. Image input is carried out based on the dimensions that have been given according to the size in the field. Bringing up the required analysis with the pushover method that has been implemented. the demand dispersion value is 0.68, the median capacity value is: DS1 0.005, DS2 0.022, DS3 0.194, DS4 1.382, for the provisions of the magnitude of the coefficient of variation in each damage state slight and moderate 0.25 and damage state extensive and complete 0,5*

*Keywords: PGA, Seismostruct, fragility curve , damage state*