STUDY OF DYNAMIC AMPLIFICATION FACTOR (DAF) OF CABLE STAYED BRIDGE DUE TO SEISMIC LOAD IN TRANSVERSE DIRECTION
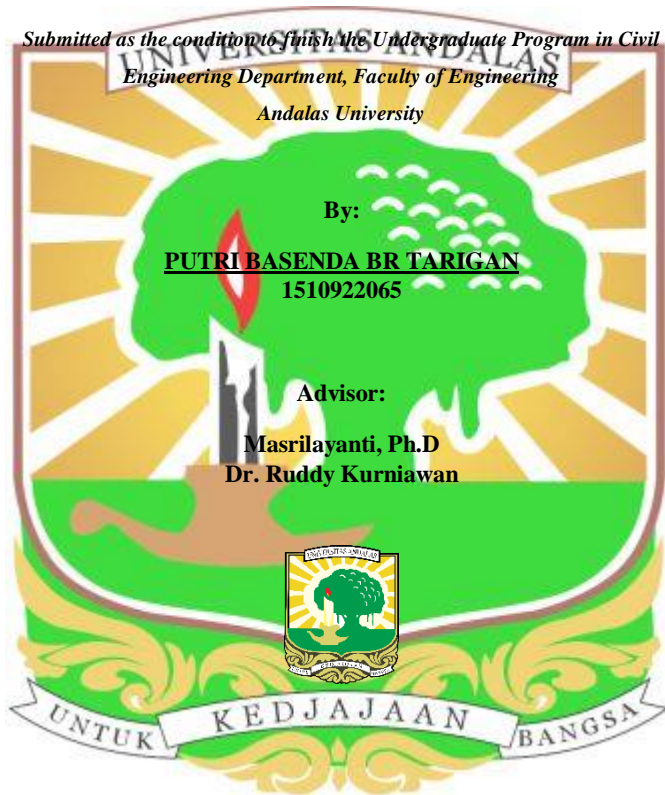
THESIS

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Abstract

This document presents a study concerning Dynamic Amplification Factor (DAF) of a cable stayed bridge caused by seismic load in transverse direction. DAF can be used to design a secure and economical bridge without testing dynamic loading in the bridge. DAF is an undimensional value obtained from the ratio of the effect from the dynamic analysis considering the combination of the dead load and the seismic load to the effect from the static analysis which only considering the bridge's own load. In this case, the dynamic load to be used is seismic load from pusjatan in the form of spectrum response and then convert into time history. This DAF is served in the graph and valued along the bridge's span in the specific point, and is calculated from the internal force, including the moment, shear, and axial and also the UZ deformation of the bridge. DAF will be calculated in the pylon, main girder, and the cables. The result show that the maximum number of the bridge appear in the cables, which has the DAF value of 5.24, whereas the DAF of the pylon is 4.87 and the DAF of the main girder is 1.25. Based on the codes discussing DAF, the DAF value of this bridge is relative small. This may because of the dynamic load used in this study is relative small.

Keywords: Dynamic Amplification Factor (DAF), Cable Stayed Bridge, Time History