Effects Of Near Fault Ground Motions On Frame Structures

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Effects Of Near Fault Ground

EFFECTS OF NEAR-FAULT GROUND MOTIONS ON FRAME ...
near-fault phenomenon requires consideration in the design process for structures that are located in the near-fault region, which is usually assumed to extend about 10 to 15 km from the seismic source (1996 SEAOC Blue Book) Aside from directivity effects, near-fault ground …
Assessment of Near-Fault Ground Motion Effects on the ...
significance of near-fault ground motions and locating most of the metropolitans, eg Tehran and Tabriz in Iran, Los Angeles and San Francisco in USA, Osaka and Tokyo in Japan etc near the active faults, seismic assessment of the structural performance is inevitable Although near-fault effects had been
Effects of Near-Fault Ground Shaking on Sliding Systems
Effects of Near-Fault Ground Shaking on Sliding Systems G Gazetas, MASCE1; E Garini2; I Anastasopoulos3; and T Georgarakos4 Abstract: A numerical study is presented for a rigid block supported through a frictional contact surface on a horizontal or an inclined plane, and subjected to horizontal or slope-parallel excitation
INVESTIGATION OF NEAR-FAULT VS. FAR FIELD GROUND ...
The effects of near-fault versus far-field ground motions are not well understood According to Somerville, near-fault ground motions differ from ordinary ground motions in that they often contain a long period velocity pulse and permanent ground displacement These characteristics occur in …
THE SIGNIFICANCE OF NEAR-FAULT EFFECTS ON ...
compared and the influence of near fault directivity effects to be discerned In the subsequent sections of the paper, first the criteria used to select the ground motions includedin this study are discussed Next, an overview of the site response analyses is presented and trends in the resulting CSRs

are discussed

Jonathan D. Bray, 1 Adrian Rodriguez-Marek and Joanne L ...

account for these special aspects of near-fault ground motions Fling-step considerations are discussed in [2] In this paper, near-fault forward-directivity effects are addressed The effects of forward-directivity are generated because the velocity of the fault rupture front is only slightly less than the shear wave propagation velocity [1]

Effect of Fault Rupture Characteristics on Near-Fault ...

earthquakes with near-fault ground motions generated by the events, forward ground- motion simulations are performed using the discrete wavenumber …

Root-mean-square distance and effects of hanging wall/footwall

asymmetry of dipping fault Therefore, the HW/FW effects on the near-fault ground motions can be ignored in the future attenuation analysis if we use the root-mean-square distance as the source-to-site distance measure Keywords: hanging wall/footwall effects, root-mean-square distance, rupture distance, Chi-Chi earthquake 1 Introduction

An Empirically Calibrated Framework for Including the ...

An Empirically Calibrated Framework for Including the Effects of Near-Fault Directivity in Probabilistic Seismic Hazard Analysis by Shrey K Shahi and Jack W Baker Abstract Forward directivity effects are known to cause pulselike ground motions at near-fault sites We propose a comprehensive framework to incorporate the effects

Near-fault ground motion effects on the nonlinear response ...

The effects of near-fault ground motion on many civil engineering structures such as buildings, tunnels, bridges, nuclear station etc have been investigated in many recent studies (Makris 1997,

Dynamic Response of Bridges to Near-Fault Forward ...

response to FD ground motions (FDGMs) and non-FDGMs Results showed that significant seismic damage may occur if the structural response is in tune with the period of the velocity pulse of the FDGM This velocity pulse is a result of fault propagation effects in the near-fault, and occurs when the direction of slip and rupture propagation coincide

Estimation of Forward Directivity Effect on Design Spectra ...

the near fault spectrum has more values [8] Saiidi and Somerville (2005) studied the near fault effects on columns designed by Caltrans regulation version 13 to develop rules for designing bridge It turned out that the corrected spectrum near the fault with low frequency (T>1s) is more than the regulations spectrum near and far from fault

MAGNITUDE SCALING OF THE FORWARD RUPTURE ...

The second paper, Somerville (2002), describes the characterization of near fault ground motion for engineering design, including the effects of the rupture directivity pulse and permanent ground displacements Near-fault ground motions are different from ordinary ground motions in that they often contain strong coherent dynamic long

Advanced Generator Ground Fault Protections

• A fault at or near neutral shunts high resistance that saves stator from large currents with internal ground fault • A generator operating with undetected ground fault near neutral is an accident waiting to happen • Neutral undervoltage (3 rd Harmonic) or Injection Techniques for complete

(100%) coverage is used 23 GSU Transformer

VARIATION OF RECORDED AND SIMULATED NEAR-FAULT ...

amplify the fault-normal component of ground motion for this type of earthquake At most of the sites located within 1km from the fault, fault zone and site effects deamplified the ground motion acceleration, and amplified the ground motion velocity 2 At stations near the southern end of the fault, where the ground motion was relatively high,

Current Development of Seismic Design Code to Consider the ...

the near-fault effect INTRODUCTION In recent years, people have learned that near-fault ground motions have many different characteristics from the far-field ones, and the near-fault ground motions will cause much more damage In fact, the associated high PGA and the pulse-like velocity waveform of the near-fault ground motion will destroy

Vector-Valued Ground Motion Intensity Measures for ...

useful for characterizing the effect of near-fault ground motions that contain a velocity pulse—a class of ground motions whose effects are poorly captured by current intensity measures Findings regarding effective intensity measures have also been used to identify new methods for selecting ground motions for use in dynamic analysis

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION ...

It is also shown that an elastic response spectrum analysis is an effective tool to determine the effects of vertical ground motions on the bridge superstructures A set of vertical design spectra and a simplified design procedure that uses the proposed elastic spectra were developed 17 KEY WORDS Vertical acceleration, near-fault ground

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