

# Effects Of Near Fault Ground Motions On Frame Structures

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## [Book] 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 ...**

of the near-fault seismological phenomenon is given in Somerville et al (1997b)] The 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 ...

#### **Assessment of Near-Fault Ground Motion Effects on the ...**

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#### **Effects of Near-Fault Ground Shaking on Sliding Systems**

fault may be affected by wave propagation effects known as “for- ward directivity” and by tectonic deformations producing a per- manent ground offset known as “fling step”

#### **INVESTIGATION OF NEAR-FAULT VS. FAR FIELD GROUND ...**

4 COMPARISON OF DAMAGE AND FORCE-DISPLACEMENT RESPONSE 41 VISUAL DAMAGE Photos were taken of the specimens after each test run The photos were used to

#### **THE SIGNIFICANCE OF NEAR-FAULT EFFECTS ON ...**

liquefaction, near-fault effects, rupture directivity, directivity, number of equivalent cycles 1 INTRODUCTION had peak ground accelerations less than 05g (ie, pga < 05g) were used In total, twenty seven of the original

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

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

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

Effect of Fault Rupture Characteristics on Near-Fault Strong Ground Motions by George P Mavroeidis and Apostolos S Papageorgiou Abstract The effect of fault rupture characteristics on near-fault

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

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

### **An Empirically Calibrated Framework for Including the ...**

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 ...**

near peak acceleration value to compare the effects different near-fault ground motion on dam response Table 1 presents the list the parameters of the ground motion records

### **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

### **OPTIMUM PERFORMANCE-BASED DESIGN OF ...**

fault normal component of near-fault ground motions that exhibit pulse-type characteristics due to forward directivity effects (referred to as forward-directivity near-fault ground motions) For this purpose, a suite of the first 20 forward-directivity near-fault ground ...

### **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,

**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

**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

**Pacific Earthquake Engineering Research Center**

Characteristics of Near-Fault Ground Motions Ground motions in close proximity to the seismic source can be significantly influenced by near-fault effects referred to herein as “rupture directivity” and “fling step” Rupture directivity affects the duration and long-period energy content of ground motions, principally in the horizontal