1. Introduction

Recent observations showed that seismograms after the 1995 Hyogo-Ken Nanbu earthquake that cannot be explained with convolution of path-effect and source-spectrum functions that describe self-similar models. Violating seismic nucleation phase and initial growth stage of the rupture propagating along the fault plane. (Three models have evolved into a fully dynamic model). A large earthquake occurs when a smaller earthquake triggers a sequence of cascading subevents. A cascading event triggers another cascading subevent.

2. Definition

2.1. Linear Growth

Moment-acceleration functions for the initiating moment-rate increase linearity in time at rupture initiation. Ellsworth and Beroza (1995) suggest that a preslip model can explain violating seismic nucleation phase or abrupt accelerations. We will define preslip as the period of initial phase of the far-field accelerations and includes preslip phase and abrupt accelerations.

2.2. Violating Seismogram, Abrupt Acceleration

Violating seismogram and abrupt acceleration in moment rate function are inconsistent with time before the rupture initiation. Ellsworth and Beroza (1995) suggest that a preslip model can explain violating seismic nucleation phase or abrupt accelerations. We will define preslip as the period of initial phase of the far-field accelerations and includes preslip phase and abrupt accelerations.

3. Conceptual Models

3.1. Preslip Model

A large earthquake occurs when a smaller earthquake triggers a sequence of cascading subevents. A cascading event triggers another cascading subevent. A large earthquake occurs when a smaller earthquake triggers a sequence of cascading subevents. A cascading event triggers another cascading subevent.

4. Simplification for Computing

4.1. Ultra Preslip Model

Ultra preslip model for small events before shaking. Ultra preslip model for small events before shaking.

5. Scheme of Computing

We will define preslip as the period of initial phase of the far-field accelerations and includes preslip phase and abrupt accelerations.

6. Displacement on the Crack

Displacement on the Crack

7. Results

7.1. Ultra Preslip Model

Ultra preslip model for small events before shaking. Ultra preslip model for small events before shaking.

8. Discussion

Preslip Model

Preslip model for small events before shaking. Preslip model for small events before shaking.

9. Conclusions

Ultra preslip model is adopted. Ultra preslip model is adopted. We will define preslip as the period of initial phase of the far-field accelerations and includes preslip phase and abrupt accelerations.

References

Beroza, G., and J. D. Eshelby, Sources of seismic nucleation phase and initial growth stage of the rupture propagating along the fault plane. (Three models have evolved into a fully dynamic model). A large earthquake occurs when a smaller earthquake triggers a sequence of cascading subevents. A cascading event triggers another cascading subevent. A large earthquake occurs when a smaller earthquake triggers a sequence of cascading subevents. A cascading event triggers another cascading subevent. A large earthquake occurs when a smaller earthquake triggers a sequence of cascading subevents. A cascading event triggers another cascading subevent. A large earthquake occurs when a smaller earthquake triggers a sequence of cascading subevents. A cascading event triggers another cascading subevent.