



Study on the Influence of Near-Fault Ground Motion on Collision Effect of Small Radius Curved Bridge

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- Research background
- Design of vibration table test
- Analysis of test results
- Study on numerical simulation
- Conclusion
- Acknowledgement

Research background and significance

- Curved bridges are used in many area



Mountainous area

- Small radius curved bridges are usually used in urban district.



Metropolitan area

Research background and significance

- Although Carefully Designed but damage still happened in recent earthquake



Separate bridge
San Francisco earthquake
1971



Port Island Bridge
Kobe earthquake
1995



Baihua Bridge
Wenchuan Earthquake
2008

Girder falling caused by Collision between adjacent girder are main seismic damage for Curved bridges



Research background and significance

Seismic damage



Partial damage of girder



Pier bottom damage



Girder Falling

Near-fault ground motion

The Concentration of near-fault strong ground motion

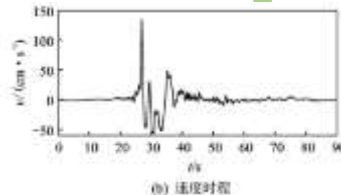
Rupture directivity effect

Long period velocity pulse

Surface Rupture

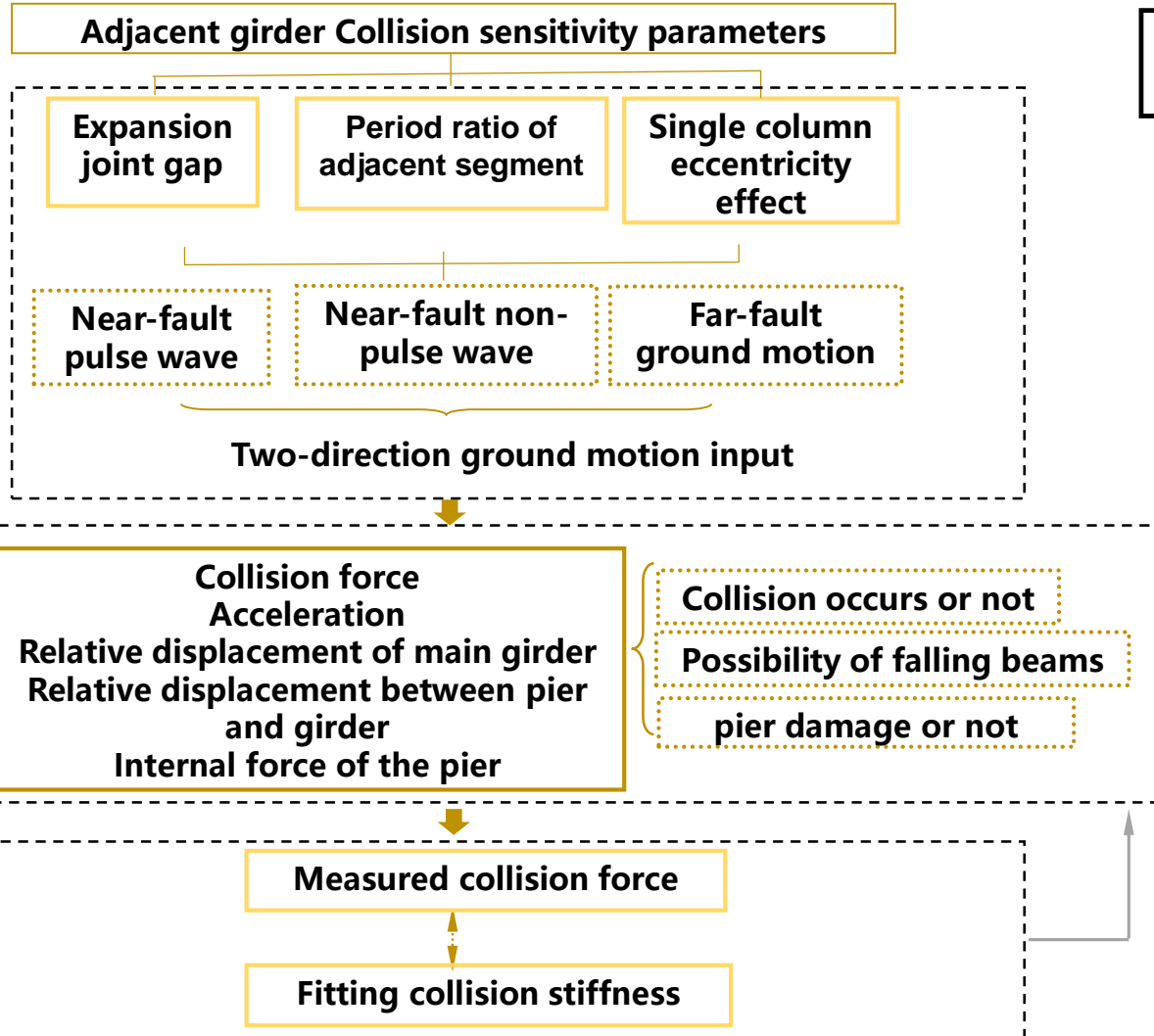
Fling step

Hanging wall/footwall effect

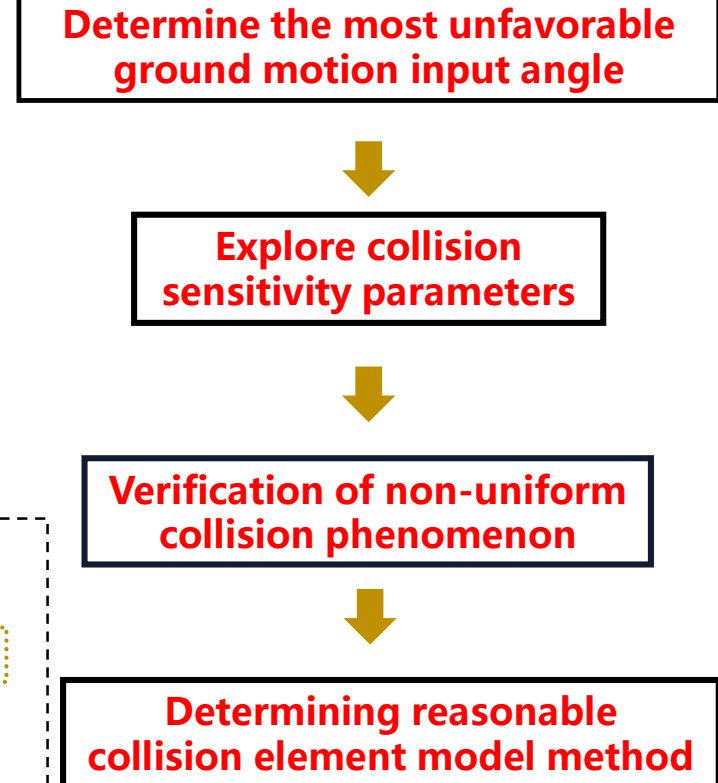


Research background and significance

Technical roadmap



Research purposes



Will publish later ...